

4 Subproject Screening, Assessment, Selection and Prioritization—Ha Giang, Hue and Vinh Yen

This chapter examines the subprojects proposed by the provinces/cities for financing under the Program. It starts with a description of the selection and screening process that was used to establish the initial lists. The methodology used to prioritize the subprojects by city, and the principles used to determine the final list of subprojects follows. The principle is that the total costs of subprojects for each city should match the financial resource envelope determined on the basis on provincial borrowing capacities and available resources from the ADB and UCCRFT. Subproject prioritization was undertaken, and this means that subprojects higher up in the ranking have been included in the Program, while those further down may be added later as more resources become available. Following the prioritization exercise are individual subproject appraisals covering technical assessments, social and environmental safeguards, poverty, gender and social aspects, and financial and economic analyses.

4.1 Selection and Screening Process and Criteria

The selection and assessment of subprojects for inclusion into the Program within the three cities—Ha Giang, Hue, and Vinh Yen—is described in this section. It starts with selection and screening process adopted, which followed the assessment undertaken by the Cities Development Initiative for Asia (CDIA) within each city. Despite the clear prioritization of subprojects from this work, each city added subprojects and deleted some as funding was secured from elsewhere. Revised lists were submitted to consultants for the Interim Report. These subprojects were changed again stemming from the Interim Report Workshop and the ADB mission. Rules of engagement were later established wherein road subprojects should not exceed 20% of the total program cost within each city. Specific funding guidelines were also given that OCR funds could only be used for direct revenue generating subprojects; land acquisition and resettlement should be financed by counterpart funds; ADF funding would be divided between the three cities at US\$40 million each; and OCR funding would be split between Hue and Vinh Yen equally at US\$25 million each. Cities revised their list of subprojects once again. These were then subjected to further evaluation to ensure that urban design, green infrastructure and low impact development features, and the results of the decision support systems work were included in the designs, and that subprojects were integrated into area specific interventions.

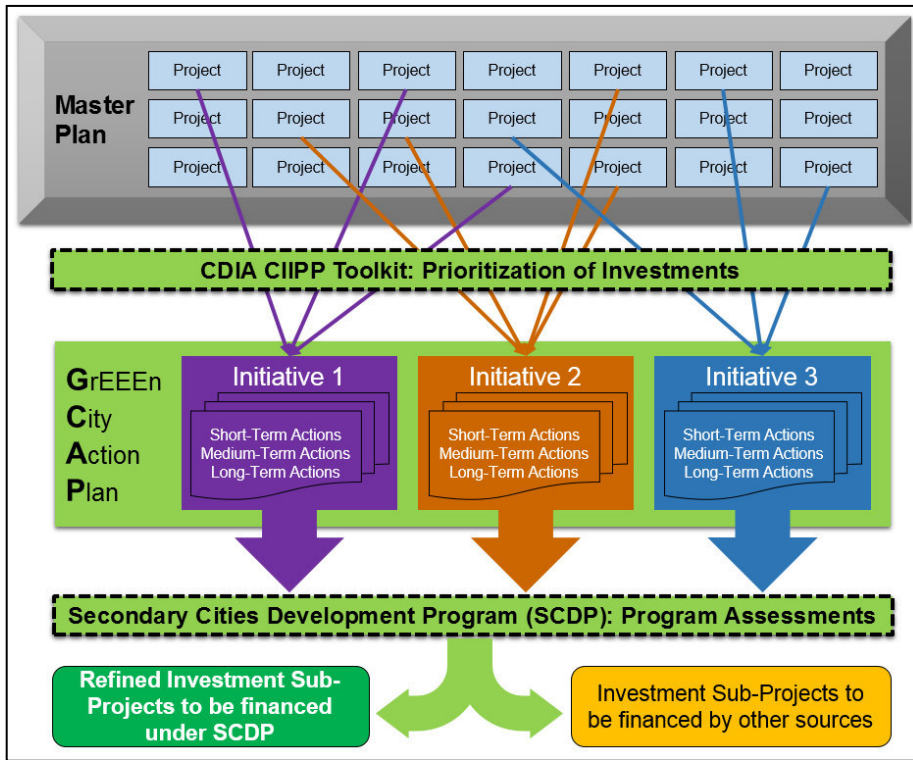
Initial assessments of subprojects was undertaken by the consultants, based on the lists made available at the time—Ha Giang, as submitted on April 8, 2015; Hue on May 4, 2015; and Vinh Yen on April 3, 2015. The assessments covered technical aspects, social safeguards, environmental aspects, poverty, gender, and social features, and financial and economic analyses. Summaries of these assessments are in Volume 3—Subproject Data Sheets.

The process of identifying, evaluating, and prioritizing investment subprojects for SCDP follows a number of steps as shown by **Figure 4-1**.

The ranking of subprojects (**Figure 4-2**) was based on:

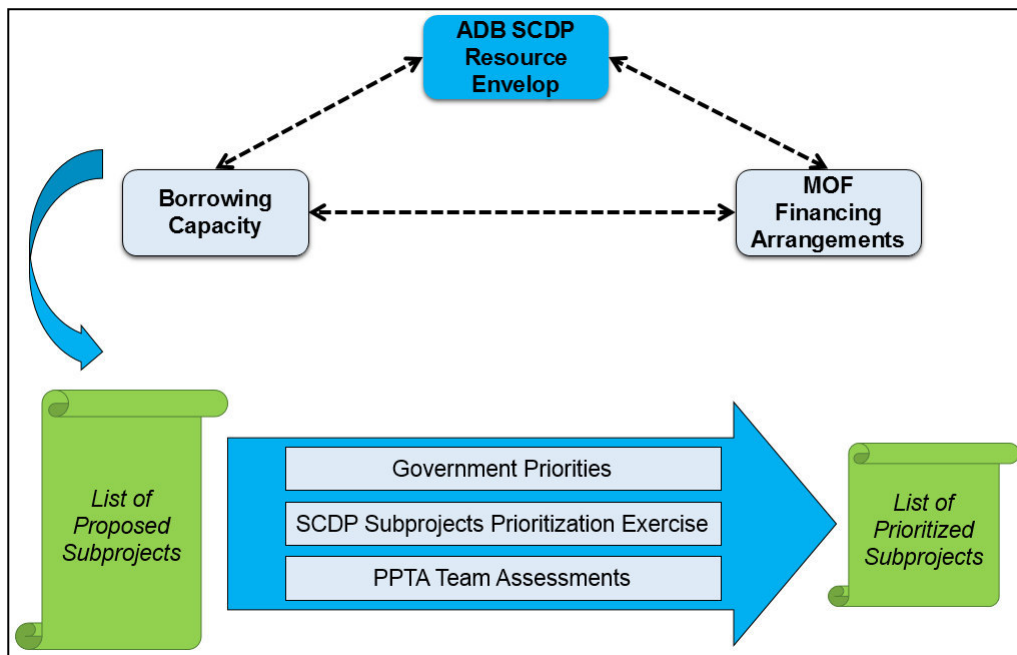
- The priorities of the governments in each Program city.
- The scores of a prioritization exercise.
- Assessments by the PPTA consultants.

Figure 4-1. From Planning to Investment



Source: PPTA Consultants.

Figure 4-2. Subproject Prioritization Process



Source: PPTA Consultants

4.1.1 Initial Subproject Identification

Subprojects that were initially identified by the cities supported the long-term objectives for infrastructure investments as provided in each province's socio-economic development master plan. They also were consistent with those included in each city's spatial master plan. In 2014, Hue, Vinh Yen and Ha Giang cities used the City Infrastructure Investment Programming and Prioritization (CIIPP) Toolkit. This was developed by CDIA to assist cities and municipalities undertake more structured planning, prioritization, and programming of urban infrastructure. The exercise was undertaken in parallel with the preparation of the GCAP for Hue and Vinh Yen. Results were taken into account in the preparation of the initiatives and actions for both GCAPs, and the formulation of the investment programs for each city. This took place prior to the engagement of this PPTA team. For Ha Giang the GCAP and investment program was prepared under this PPTA.

The GCAPs translated the list of prioritized investment subprojects and capacity development activities into feasible actions. CDIA's CIIPP Toolkit application in the Program cities supported the provincial and city governments to reduce their 'wish lists' to 'short lists' by assessing each subproject and applying weights for different prioritization criteria—purpose or demand for the subproject, public response, environmental and socio-economic impacts in relation to green cities, and their feasibility—in the screening exercise. Each criteria was weighted, and this was slightly different in Hue in comparison to the other two cities (**Table 4-1**).

Box 2: CDIA City Infrastructure Investment Programming and Prioritization (CIIPP) Toolkit:

The toolkit was developed to assist cities and municipalities throughout Asia to move from strategies to bankable investment projects by doing a better and more structured job in urban infrastructure planning, prioritization and programming. The toolkit has three components:

- *Analysis of the Investment Budget*—determine the financial envelope of the city to undertake strategic infrastructure projects
- *Prioritize Projects*—using a rational approach and a pre-determined set of indicators
- *Program Projects*—in a 5-year investment plan matching the fiscal space of the municipality.

The approach towards prioritizing projects was adopted in the three cities. It used qualitative and quantitative data, and required input from key officials and agencies within the city administration, during a participatory workshop.

Source: Project Programming and Prioritisation Toolkit. User Manual. From wish list to short list: Prioritising Urban Infrastructure Projects for Local Development. CDIA. 2009.

Table 4-1. Weighting Criteria Used to Prioritize Subprojects, CDIA

City	Purpose (%)	Public Response (%)	Environment (%)	Socio-Economic (%)	Feasibility (%)
Ha Giang	10	10	35	30	15
Hue	15	10	30	30	15
Vinh Yen	10	10	35	30	15

Source: Internal project documents. CDIA. 2014

The Program cities provided a final list of prioritized subprojects for financing, which reflected the GCAP and CIIPP Toolkit results, but incorporated changes on account of some subprojects having already secured financing. Some new ones were also added. Since the GrEEEn Cities approach⁵³ guided the Program cities, the eventual list of investment subprojects did not change much from interim prioritizations. Nevertheless, some changes were discussed and agreed with the EAs to: (i) strengthen the Program's impact, outcome, and outputs; (ii) adjust intended subprojects vis-à-vis financial resources available in this Program; and (iii) align the planned investments with the institutional, economic, safeguards, as well as financial and procurement capacities of the EAs. The PPTA Team conducted site visits and held consultations in the three cities to verify previous assessments, discuss investments, and identify options to refine subprojects through GrEEEn guidelines, and recommendations for infrastructure planning and urban design.

⁵³ S. C. Sandhu and R. Naik Singru. 2014. *Enabling GrEEEn Cities: An Operational Framework for Integrated Urban Development in Southeast Asia*. ADB Southeast Asia Working Paper Series No. 9, November 2014. Manila.

Also, the selection of subprojects was dependent upon the resource envelope available for financing, which determined the scale of the Program, and the subprojects for inclusion based upon a ranking of importance in relation to goals and objectives. The financial envelope for the Program was determined based upon the borrowing capacities of each province, the draft financing arrangements to be adopted by the Ministry of Finance (MOF) regarding central transfers to provinces for funding investment projects (**Chapter 9**), and the amount of money set aside by ADB and UCCRTF for the Program.

4.1.2 Subproject Ranking Process

A further subproject evaluation was undertaken, using criteria developed by the consultants. Each subproject was rated according to the perceived accomplishment—scoring—against nine criteria, expressed as questions:

Scoring: 0=not at all // 1=neutral // 2=somewhat // 3=significantly

- (i) To what extent does the subproject support the vision of the GCAP?
- (ii) To what extent does the subproject support a smart and competitive city?
- (iii) To what extent does the subproject support an environmentally sustainable and resilient city?
- (iv) To what extent does the subproject support a socially inclusive city?
- (v) To what extent will the subproject have the potential for direct revenue generation/cost recovery?
- (vi) To what extent does the subprojects have the potential for private sector involvement?
- (vii) To what extent does the subproject have a sustainable operations and maintenance plan (system and finance)?

Scoring: 0=none // -1=very little // -2=some // -3=significant

- (viii) To what extent will the subproject require relocation of people and businesses?
- (ix) To what extent will the subproject require land acquisition?

Scores were totalled for each subproject enabling a ranking from the highest to lowest to be undertaken. A subproject would be included or excluded according to its position on the ranking, and the available resources. This was undertaken with the concerned city and provincial officials, the private sector and civil society during workshops held in each city. The PPTA consultants involved key stakeholders—government, private sector, and civil society—score subprojects under the first four criteria—GCAP vision and the 3Es. Criteria (v)-(vii)—revenue generation/cost recovery, private sector involvement, and O&M plan—were scored by the technical staff of the government, and the local feasibility study consultants⁵⁴. The last two criteria—relocation and land acquisition were scored by the PPTA consultants according to subproject technical details and ADB’s guidelines in its Safeguard Policy.⁵⁵ Nevertheless, the scores in these two criteria were discussed with participants. Further consultations between PPTA consultants, Program cities, and their local consultants enabled the incorporation of green recommendations into the subproject designs. The results of this process are summarized for each of the Program cities separately. **Appendix 6** details the results of the exercise.

4.1.3 Final Selection

Based on the results and discussions of the subprojects prioritization exercise with each city government, the private sector, and civil society, further consultations were held during the ADB interim mission in July 2015. These meetings brought together the government’s priorities; the results from the stakeholder prioritization exercise; and the PPTA consultant team’s assessments of the subprojects. The consultations helped to revisit the rationale and purpose of the SCDP as a “Green Cities” program, and to correspondingly prioritize and select subprojects that meet the criteria for green infrastructure with positive economic, environmental, and social impacts. ADB, PPTA consultants’ team, and the Program

⁵⁴ This was undertaken since it was assumed that the knowledge of each subproject by other participants would not suffice to make a sufficiently informed judgment on these technical criteria.

⁵⁵ The rationale was that criteria (vi) and (vii) are technical not subjective to individual judgments, but are scored based on ADB. *Safeguard Policy Statement*. Manila. 2009.

cities discussed which kind of subprojects—scale, scope, and technical complexity—would be most suitable for the Program.

Further consultations were undertaken, and the list of subprojects was amended again by the cities to take into account revised guidelines of ADB and the PPTA team, which involved:

- Maximum ADB loan amounts—US\$40 million ADF for each city, and US\$25 million OCR each for Hue and Vinh Yen.
- OCR could only be used for direct revenue generating subprojects.
- Land acquisition and resettlement should be financed by local counterpart funds.
- The investment requirements for road subprojects should be less than 15%-20% of program cost for each city.

Revised subproject lists were provided by each city that responded to the above criteria. These were further reviewed by the PPTA consultants' team and the staff of the Program cities, and their local consultants worked on further improvements to the proposed designs of subprojects. This ensured the inclusion of green infrastructure, low impact development and urban design features, and refocusing investments on integrated area development. Additional results from the economic, financial, environmental, and social analysis, including safeguards, poverty, gender and social impacts and land acquisition and resettlement requirements informed about each subproject's viability. Accordingly, the Program cities arrived at their final list of prioritized subprojects.

4.1.4 Spatial Rationale for Subprojects

The selected subprojects were grouped according to broader spatial areas within each city that would be improved under the Program. Each subproject was seen as part of larger spatially integrated scheme. These are identified below for each city.

Ha Giang

The subprojects will improve the southern gateway to the city, upgrade drainage of the inner city and enhance drainage and access in the north east:

- Improving access in south and gateway to the city. The upgrading of National Road 2 will complement the new southern ring road and Lo River bridge. With green features, this component will improve the appearance of the southern gateway into the city. It will encourage new development in the south east and improve access to the inner urban area.
 - *Upgrading of National Road Number 2* to improve access, strengthen the road network in the south of the city and improve appearance of the southern entrance to the city—*Ha Giang subproject 8*.
 - *Southern Ring Road Improvement* to enhance connectivity, divert traffic from the city and improve mobility and road safety—*Ha Giang subproject 9*.
 - *Bridge from National Highway Number 2 to the Southern Ring Road*—River Lo bridge as the third crossing of the river to improve access and reduce travel times—*Ha Giang subproject 10*.
 - *Western Embankment of Lo River* to stabilize river and stream banks to adapt to climate change and reduce environmental pollution through creating a green landscape—*Ha Giang subproject 4*.
 - *Southern Embankment of Me Stream*, southern side—*Ha Giang subproject 6*.
 - *Improvement to Existing Landfill*—properly engineered sanitary landfill to cover needs for ten years, includes a new cell and leachate treatment—*Ha Giang subproject 7*.
- Drainage improvements in the inner city to clean and rehabilitate the primary storm water drainage system, discourage encroachment and provide public open space.
 - *Drainage Improvements of Inner City Wards*—Minh Khai, Tran Phu, and Nguyen Train wards—*Ha Giang subprojects 1 and 2*.
- Drainage improvements and better access for the peri-urban areas in the north east of the city which is to encourage mixed use development, mainly for leisure activities. Subprojects comprise integrated embankment and road improvements to reduce flooding and improve access and mobility of the

north-eastern peri-urban areas along with primary storm water drainage improvements that would discourage encroachment and dumping.

- *Embankment and Roads on both sides of Mien River—Ha Giang subproject 5.*
- *Drainage for T1, T2, T3 and T4 primary drains—streams—in Quang Trung ward—Ha Giang subproject 3.*

Hue

The subprojects target the integrated development and greening of three areas:

- Improvement of the environment in the Citadel and surrounding areas. They are designed to improve drainage and reduce flooding and provide a more green environment for residents and tourists.
 - *Dredging and Embankment of Ke Van River—Hue subproject 1.*
 - *Drainage and Pavements in Four Inner City Wards in the Citadel area—Thuan Thanh, Thuan Loc, Tay Loc and Thuan Hoa—Hue subproject 2*
 - *Dredging and Embankment, Six Lakes in the Citadel—Xa Tac, Phong Trach, Mung, Huu Bao, Tien Bao and Vuong—Hue subproject 3*
 - *Dredging and embankment of Lap River, Kim Long ward—Hue subproject 5*
 - *Dredging and embankment of An Hoa River—Hue subproject 7*
 - *Improvement of Citadel Canal—Hue subproject 8.*
 - *Rehabilitation/Embankment of Dong Ba River (from Ba Ben to Bai Dau bridge)—Hue subproject 11.*
- Greening, drainage and improving access within the new development area in the east of the city. The subprojects will encourage further development of this new part of the city which will include new public administrative buildings, housing and commercial activities. Subprojects will contain green elements and low impact development along with appropriate urban design features at the outset.
 - *Eco-Channel of the An Van Duong Development Area—Hue subproject 6.*
 - *Park and Square in the Administrative Area, An Van Duong—Hue subproject 10.*
 - *Section of Central Road, including Bridge, in New Development Area of An Van Duong, connecting Areas A and B, including a bridge over the Nhu Y River)—Hue subproject 14.*
 - *Vy Da Bridge and Access Roads—Hue subproject 17.*
 - *Park with Trees, Sidewalks, Drainage, Lighting in An Van Duong, within the central ecological axis in the New Development Area of An Van Duong—Hue subproject 9.*
 - *Rehabilitation/ Embankment of An Cuu River, the remaining 2 km—Hue subproject 12.*
 - *Rehabilitation/Embankment of Nhu Y River, along Han Mac Tu road, from Vy Da bridge to Van Duong—Hue subproject 13.*
- Promotion of tourism infrastructure in the south western part of the city. Subprojects will improve access to tourist sites and historic monuments, temples, garden houses and fruit farms. Landscaping will be improved, cycle paths added, along with street lightning.
 - *Bui Thi Xuan Road—Hue subproject 15.*
 - *Huyen Tran Cong Chua Road—Hue subproject 16.*
- Water supply for proposed solid waste management facility to serve the whole city, and enable improved water supply for villages to the south west of the city.
 - *Water Supply to Phu Son Solid Waste Treatment Facility, Huong Thuy Town and neighbouring villages—Hue subproject 4.*

Vinh Yen

The subprojects involve improvements around the Dam Vac Lake, and essential infrastructure to support the development of the proposed University village in the north of the city:

- Improvement of Dam Vac Lake and its surrounding areas. Dam Vac Lake is the heart and main green hub of the city. The aim is to improve the quality of water, the lake's carrying capacity, and improve the environmental of the surrounding areas including the quality of water that flows into the lake. This involves improving wastewater management and sanitation, financing household connections and greening of the surrounding areas. It also involves building the first public park of the city.
 - *Dredging and Landscape Protection, Dam Vac Lake—Vinh Yen subproject 1.*
 - *Green Park Development near Dam Van Lake, conservation and development of green trees and parks in the city—Vinh Yen subproject 5.*
 - *Tertiary Wastewater Sewers—household connections and sanitation improvements. Focus initially on connections in Ngo Quyen, Dong Da, Lien Bao and Khai Quang wards—Vinh Yen subprojects 3 and 4.*
 - *Wastewater Collection and Treatment, Western Part of City—Dong Tam, Hoi Hop and Tich Son wards and Dinh Trung and Tranh Tru communes—Vinh Yen subproject 2.*
- Development of infrastructure for the proposed University site. The new university village is located in the north of the city and the subproject involves improving access to the area. The proposed road will provide the structure and overall framework for the development of the area, and will open up significant areas of land for development. The exhibition/linkage center with its green development training facilities should be able to integrate with the new universities and colleges and local business.
 - *Infrastructure to University Area, to Improve access to and within the area—the main arterial road, and a section of the ring road number 2 of the city—Vinh Yen subproject 6.*
 - *Exhibition/Linkage Center for Business Support—promotion of low carbon development and educational and training linkages to university—Vinh Yen subproject 7.*

4.2 Costs Estimates of Subprojects

Some 31 subprojects have been identified by the cities—10 in Ha Giang, 15 in Hue and 6 in Vinh Yen. The total cost of the Program on the basis of these subprojects is about \$222.89 million (VND5,172 billion)—Ha Giang \$45.49 million (VND1,006 billion), Hue \$93.77 million (VND2,231 billion), and Vinh Yen \$83.63 (VND1,935 billion). **Tables 6-2, 6-3, and 6-4** list the subprojects and their cost estimates for Ha Giang, Hue and Vinh Yen, respectively.

The major subprojects in Ha Giang are principally drainage and embankments, of which six—drainage for Tran Phu and Nguyen Trai Wards; Minh Khai Ward; T1, T2, T3, T4 in Quang Trung Ward; embankments of Lo River, Mien River, Me stream—all have a base cost of over VND400 billion, and represent some 63% of the total base cost. The other subprojects, costing more than VND200 billion, are the improvement of the National Road No.2, Southern Ring and bridge.

Table 4-2. Program Cost for Ha Giang City

Item	VND million	\$ million
Base Costs		
1 Drainage for Tran Phu and Nguyen Trai Wards	37,653	1.71
2 Drainage for Minh Khai Ward	40,893	1.86
3 Drainage for T1,T2,T3,T4 in Quang Trung Ward	7,546	0.34
4 West Embankment of Lo River	51,863	2.36
5 Embankment and Roads on each side of Mien River	241,579	10.98
6 Southern Embankment of Me Stream	24,571	1.12
7 Improvement of Existing Landfill	19,404	0.88
8 Upgrading of National Road No.2	41,796	1.90
9 Southern Ring Road Improvement	86,585	3.94
10 Bridge from National Road No.2 to Southern Ring Road	88,084	4.00
Subtotal (Base Costs)	639,974	29.09
Detailed Engineering Design and Supervision (DEDS)	44,798	2.04

Item	VND million	\$ million
Land Acquisition and Resettlement (LAR)	32,629	1.48
Contingencies		
1 Physical	72,565	3.30
2 Price	123,420	5.61
Subtotal (Contingencies)	195,985	8.91
Taxes	87,452	3.97
Interest During Construction	5,480	0.25
TOTAL COST	1,006,318	45.74

Source: PPTA Consultants.

Major subprojects in Hue are more varied than those in Ha Giang, and include dredging and embankment improvements in various locations; parks, roads and a bridge; and provision of water supply to Phuson Son solid waste management facility and adjacent villages; all costing over VND1,151 billion.

Table 4-3. Program Cost for Hue City⁵⁶

Item	VND million	\$ million
Base Costs		
1 Dredging and Embankment of Ke Van River	48,750	2.22
2 Dredging and Embankment of Lakes in Citadel	62,694	2.85
3 Dredging and Embankment of Lap River, Kim Long Ward	34,061	1.55
4 Eco-Channel of the An Duong Development Area	122,732	5.58
5 Dredging and Embankment of An Hoa River	74,800	3.40
6 Improvement of the Citadel Canal/Moat	70,395	3.20
7 Rehabilitation/Embankments of Dong Ba, An Cu, Nhu Y Rivers	28,443	1.29
8 Drainage and pavements in Four Inner City Wards of Citadel	195,500	8.89
9 Water Supply System to Phu Son Solid Waste Management Facility and Villages	18,820	0.86
10 Park, Paths, Drainage, and Lighting in An Van Duong Development Area	142,828	6.49
11 Park and Square in the Administrative Area, An Van Duong	116,111	5.28
12 Section of Central Road in An Van Duong Development Area including Bridge	64,937	2.95
13 Bui Thi Xuan Road	70,348	3.20
14 Huyen Tran Cong Chua Road	42,648	1.94
15 Vy da Bridge and Access Roads	58,090	2.64
Subtotal (Base Costs)	1,151,157	52.33
Detailed Engineering Design and Supervision (DEDS)	80,581	3.66
Land Acquisition and Resettlement (LAR)	216,978	9.86
Contingencies		
1 Physical	145,002	6.59
2 Price	306,298	13.92
Subtotal (Contingencies)	451,300	20.51
Taxes	162,832	7.40
Financing Charges	88,076	4.00
TOTAL COST	2,150,924	97.77

Source: PPTA Consultants.

In Vinh Yen, 38% of the total base cost is attributed to wastewater management—collection, treatment and tertiary sewers. An access road to the proposed University Village costing VND254 billion is being proposed. Other subprojects costing more than VND100 billion are dredging and landscape conservation of Van Dam Lake, a green park development and construction of an exhibition linkage center for business support.

⁵⁶ Based on the subproject list submitted on May 13, 2015 as approved by the PPC.

Table 4-4. Program Cost for Vinh Yen City

Item	VND million	\$ million
Base Costs		
1 Dredging and Landscape Protection of Dam Vac Lake	209,234	9.51
2 Collection and Wastewater Treatment in West Vinh Yen	308,017	14.00
3 Tertiary Wastewater Sewers	119,796	5.45
4 Green Park Development near Dam Vac Lake	186,444	8.47
5 Infrastructure for University Area	254,178	11.55
6 Exhibition/Linkage Center for Business Support	53,591	2.44
Subtotal (Base Costs)	1,131,260	51.42
Detailed Engineering Design and Supervision (DEDS)	79,188	3.60
Land Acquisition and Resettlement (LAR)	64,013	2.91
Contingencies		
1 Physical	127,446	5.79
2 Price	277,525	12.61
Subtotal (Contingencies)	404,971	18.41
Taxes	160,180	7.28
Financing Charges	95,141	4.32
TOTAL COST	1,934,753	87.94

Source: PPTA Consultants.

4.3 Subproject Technical Assessments

All subprojects selected by the respective PPCs were subjected to detailed technical evaluations that covered climate change, flood management and decision support systems; technical engineering aspects including green infrastructure and low impact development; and the incorporation of urban design features. Each assessment is described below.

4.3.1 Climate Change, Flood Management and Decision Support System (DSS)

Introduction

The practical implementation of the GrEEEn Operational Framework in the three Program cities requires an urban profiling as well as a diagnostic assessment. However, in relation to flood management, a vast amount of input data was initially required from the Vietnamese authorities to undertake a through assessment (**Table 4-5**), as reflected in the Memorandum of Understanding (MoU) between GoV and ADB, and drafted during the Program's Inception Mission (March 9-17, 2015).

Table 4-5. Input Data Initially Required From the Vietnamese Authorities, Regarding Climate Change, Flood Management and DSS Topics and, It's Availability Constraints

Required Input Data	Availability	Remarks
Climate Change Action Plans, if available	Yes	—
Disaster Management Plans, if available	Yes	—
High resolution digital model for hydrological studies: for instance, grid size of 30 m x 30 m	—	NASA has recently released its SRTM-2 Dataset (grid 30 m x 30 m), freely available
High resolution digital model for hydraulic studies: for instance, grid size of 2 m x 2 m	—	—
General maps for the basins corresponding to the rivers crossing the 3 cities (for instance, 1:25,000 scale)	Yes	—
Detailed maps of the 3 cities (1:1,000 — 1:2,000 scale).	—	Only on scale 1:5,000
Aerial photographs (in particular, the historical ones).	—	—

Required Input Data	Availability	Remarks
Stocktaking of drainage systems for the three cities (pipelines, retention ponds or similar structures, gutters; drawings defining the network and characteristics of pipelines, as well as discharge points). Problems found.	Yes	—
Thematic maps (vegetation cover, land use, geology, infrastructures, slopes, etc).	—	Only on large scale
Data from weather observatories located in the areas of study and surrounding areas. It would be interesting to access to data from all the weather observatories existing in Viet Nam, if possible. Otherwise, to data from weather observatories located, at least, in a radius of 20 km of the studied areas.	Yes	Daily discharge and rainfall; monthly relative humidity, evaporation and wind
Historical data series of temperature, relative humidity and rainfall (at least, from weather observatories close to each one of the cities). Wind data series, when available, would be useful as well.	Yes	—
Evapotranspiration monthly data within the basins.	—	Data could be generated with a model.
Sample hyetographs of selected extreme rainfall events.	Yes	Hourly data
Discharge data series (including historical ones) of gauge stations along the rivers crossing the three cities.	Yes	Hourly data
Tidal data in Hue City.	—	Data only available from Da Nang
Meteorological record of historical events producing personal and material damages in the area, such as floods, droughts, heat waves and typhoons. Dates of these past extraordinary harmful events, adding possible press/photo coverage.	Yes	—
Specifically concerning data on historical floods: synoptic process triggering floods, (rainfall) hyetographs, precipitation intensity data (intensity-duration-frequency curves or similar), flood hydrographs, delimitation of flooded areas, stocktaking (and evaluation) of impacts (damages) and human losses, if any.	—	Incomplete information
Geomorphology, solid transport, erosion and sedimentation studies.	—	N/A
Structural measures (embankments, bypasses, dykes, dams, etc) and non-structural measures (reforestation, urban zoning, early warning systems, etc) carried out and foreseen in order to reduce flood impacts (considering the whole river basins).	—	N/A
Stocktaking of infrastructures having influence on the hydraulic system performance (bridges, weirs, reservoirs, etc).	—	N/A
Hazard maps/risk maps of the cities.	Yes	Incomplete information
Earlier hydrologic and hydraulic studies and projects.	Yes	Incomplete information
Urban development and demographic evolution of the cities.	—	N/A

Source: Memorandum of Understanding (MoU) signed between the Government of Viet Nam (GoV) and the Asian Development Bank (ADB), within the framework of the Program.

Unfortunately, much of this data was unavailable—for instance, scarcity of hydro-meteorological data, amongst others. Nevertheless, significant efforts were made to overcome these difficulties and the assessment was undertaken using the most appropriate information available.

The methodology adopted was structured in three stages:

- Situational awareness.** To understand how the water system—the river and the urban drainage network—work both on a hydrological scale—basin—and on a hydraulic scale—the city. This knowledge required the current situation, and the most likely future scenario taking into account climate change and urban development trends. It was crucial to access available information—data, studies, projects, records of historical events, etc.—on floods and hydraulic dysfunctions in the city

(Figure 4-3). Meetings were held with key stakeholders and local authorities to collect data and discuss technical issues, not only in the three cities but also in Hanoi. For reference, a list of people met and the agencies visited is included in **Appendix 1**. Furthermore, specific field visits were conducted in each of the three cities, with the support of local authorities. For completeness purposes, a summary text on these visits and a photographic report are contained in **Appendix 5**.

- **Diagnosis.** The information gathered in the field was processed and analysed, and a diagnosis was carried out adopting a multidisciplinary approach. Key technical aspects—including hydrology, hydraulics, climate change, historical floods and damages, structural and non-structural measures, and DSS—were taken into account. Several other aspects judged relevant were also considered, depending on available information and/or comments provided by key stakeholders and local authorities. This covered environmental integration and sustainability, coordination with and integration into the urban development and capacity building, among others.
- **Analysis of measures and considerations on DSS.** Based on the diagnosis, key aspects were analysed from a flood protection approach and included: relevant measures implemented, planned but not implemented yet, and those proposed by the local Department of Planning and Investment (DPI), ODA offices and/or included in each city's GCAP. Improvements and, where necessary, alternative measures were proposed. The overall strategy aims to achieve a reasonable balance between structural and non-structural measures. Best international practices were taken into account and special attention was paid to how Green Infrastructure (GI) and Low Impact Development (LID) techniques could be successfully incorporated into the existing and planned urban environment. This focussed on their role in improving the hydrological performance of urbanized catchments and, consequently, reducing water-related risks. Guidance for the DSS is given in each case. A DSS is a tool that supports and helps to optimise decision-making. As outlined in section 3.1.3, in flood management this ranges from relatively simple tools such as GIS-based, or not, thematic maps—for example, risk maps, and network schemes—to more complex ones, such as hydrological and/or hydraulic models of a basin, of a river stretch, of a drainage system, or even more sophisticated ones, such as basin-based early warning or operational systems.

Figure 4-3. Urban Flooding in Hue (picture taken on August 27th 2015)



Source: PPTA Consultants.

Figure 4-4. Field Visit Carried Out in Vinh Yen City, to Achieve Better Understanding of the Complex Hydrological/Hydraulic System, and Clarification of Technical Questions With Local Authorities and Key Stakeholders.



Source: PPTA Consultants.

The outputs from the analysis are an essential step that lays the foundation to: (i) properly design and build flood protection infrastructure and other urban assets—making them more resilient; (ii) allocate sufficient resources for their management; (iii) help identify overall infrastructure deficits in the city; and (iv) develop long-range plans to address these deficits. An additional objective can be achieved using DSS—to improve communication with the public on infrastructure spending. In fact, these are just some of the key benefits resulting from building an asset management culture (Jamer, 2015).

The most relevant outputs from applying the described methodology to each city are summarized in the following subsections, and additional material is included in **Appendix 5**.

Ha Giang Screening

From a flood management standpoint, the key features of Ha Giang Province are its trans-boundary nature—since it shares a 207 km border with the People’s Republic of China (PRC)—and its location in the mountainous headwaters of the Lô-Gam River Basin, a left bank tributary of the transnational Red River. In particular, the Lô River’s source is in the Chinese Yunnan Province, while almost two thirds of its length are in Viet Nam’s Ha Giang Province.

Figure 4-5. Field Visit Carried Out in Ha Giang City: (A) the TA Specialists Acquire A Holistic View of the Hydrologic and Hydraulic Environment; (B) Local Dwellers Showing the Extent of Water Levels During the Last Flood Event, Occurred in 2014.



Source: PPTA Consultants.

The provincial capital, Ha Giang City is some 20 kms from the Chinese border, in the mountainous and forested sub-basin of the Lô River Basin—approximately 8,300 km², according to Le et al., 2010. Sediment transport processes are important, since more than 80% of the total annual rainfall—estimated on average to be 2,430 mm—falls with sufficient energy to produce soil detachment. The urban area has developed along several watercourses, in narrow and steep river valleys with forest-covered slopes prone to landslides and riverbank stability problems. The Lô River itself—since 2007 regulated upstream by the large dam of Malutang, in PRC—is the main waterway dividing the town. Most of urban development of Ha Giang City has been on its left bank; while the northern part of the city has developed along its main tributary, the Mien River. The latter river has recently been impacted by the construction of a system of five hydropower plants—four of which are operating. Other minor watercourses are the Me Stream, a right bank tributary of the Lô River, located in the southern part of city, and partly obstructed by a causeway-spillway—the Chang Spillway; the Nam Thau Stream, a left bank tributary of the Mien River, located in the eastern part of the city; and the Tien Stream, a small tributary of the Lô River, upstream of the Mien River and Lô River junction.

Major floods are historically associated with strong currents created by a particular combination of high rainfall and narrow and steep river valleys. Besides river overflows—because of flows and possibly water releases from the dams upstream, both in Viet Nam and in PRC—flooding is mainly caused by a limited urban drainage capacity to convey water generated in the surrounding hills as a result of heavy rains for 2-3 days. The inner city has a combined sewer system—storm water and wastewater, which is reported to be in reasonable good condition. However, rapid urbanization has resulted in streams being partly encroached by households and solid waste dumped into them, blocking drainage and forming stagnant polluted waters. There are some low spots within the urban area, which flood repeatedly. Economic losses in the two most recent floods were estimated at VND 5 billion in 2013, and VND 24.5 billion in 2014.

To address the problems of flood protection and drainage, the following initiatives have been implemented and/or are proposed:

- *Building a separate wastewater system* for the central area of the city—Phase 1: 2015—and the new urban areas—Phase 2: 2025, improving drainage in several wards, among others. Since various

financing sources have been tapped, the original package has been broken down into smaller subprojects. Some of these are currently funded by the Danish International Development Agency (DANIDA) focussing on the Nguyen Trai, Tran Phu and Minh Khai wards.

- *Embankments in several reaches of the Lô River network.* Embankment works in the Mien River, along the north side—from the River Tien confluence to Phung Hung Bridge—are completed, but the south side has not been improved. In the lower reach of the Me Stream—near the Chuang village bridge—a large concrete-based embankment is also under construction. Currently, more than 8 km of new embankments seem to be planned: a western embankment of the Lô River—from Goc Gao to new Me Bridge; embankments on both sides of Mien River—from the confluence of Tien Stream to Bridge 3/2; southern embankment of Me Stream—from old Me Bridge to Chang Spillway; and embankment of Nam Thau Stream, from Quyet Thang to the confluence of the Mien River.

Some of the above interventions have been proposed for funding under the Program. Those related to flood management and urban drainage are shown as **Table 4-6**.

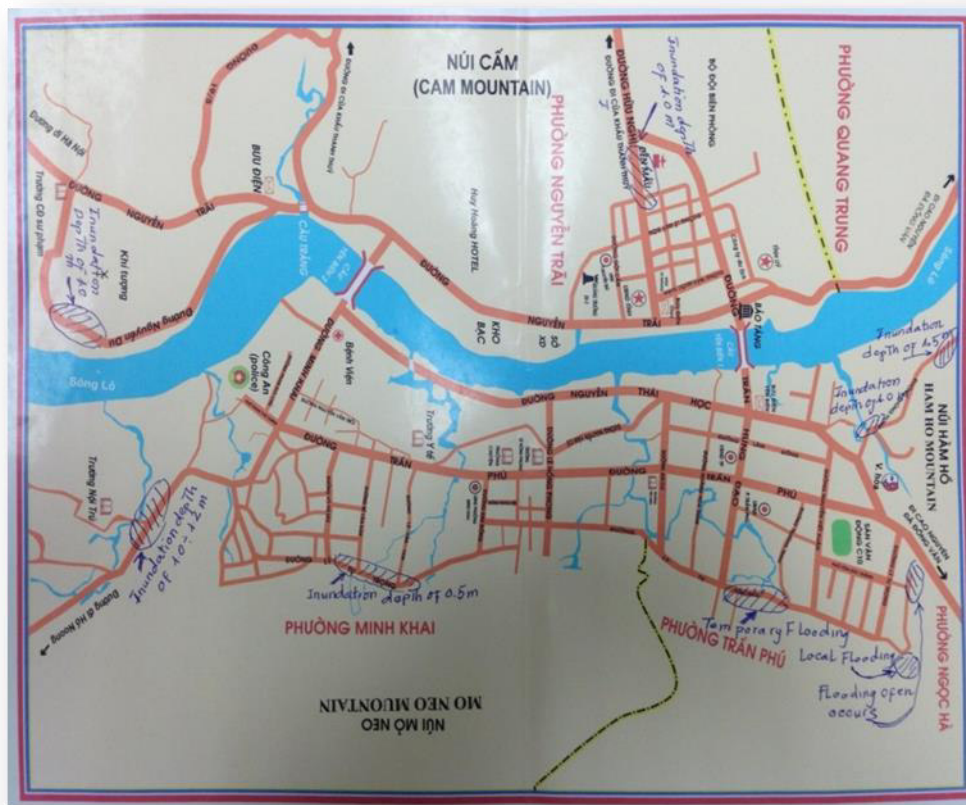
Table 4-6. Proposed Subprojects Which May Have Some Impact on Improving Flood Management and Urban Drainage in Ha Giang

Proposed Subproject	Key Topic
Drainage of Tran Phu and Nguyen Trai wards	Urban drainage
Drainage of Minh Khai ward	Urban drainage
Drainage of T1, T2, T3 and T4 for Quang Trung ward	Urban drainage
Western embankment of the Lô River—from Goc Gao to the new Me Bridge	Flood protection
Embankment on both sides of Mien River—from River Tien confluence to Bridge 3/2	Flood protection
Southern Embankment of Me Stream—from Old Me Bridge to Chang Spillway	Flood Protection

Source: PPTA Consultants.

On a river basin scale, flood management in Ha Giang is conditioned by upstream operation of PRC dams on the Lô River, while other planned, or already completed small hydropower plants in the Mien River, will also influence flood events. Improvement of the existing coordination mechanisms between Vietnamese and PRC authorities for data interchange and sharing is essential; in particular, those relating to hydrology and dam management—outflows from the PRC Malutang dam—in the upper Lô River Basin.

Figure 4-6. Map Showing the Location of Several Flooded Areas in Ha Giang City during the Event of September 2014, Prepared By Local Authorities. Flood Water Depths Were Estimated.



Source: PPTA Consultants.

Some comments and recommendations can be drawn from the assessment of these structural measures designed by local consultants. Actually, most of them have been included in the technical/engineering assessment (see **Volume 3**), where greener alternatives are proposed taking into account flood risk, climate change and environmental aspects.

- Calculations must take into account not only the Viet Nameese technical standards for the design of dykes in non-coastal areas—TCVN-9901-2014, among others or the technical standards for design of urban drainage⁵⁷—TCVN 7957:2008 Drainage and Sewerage - External Networks and Facilities, when required, but also the climate change impacts—mainly, through the rainfall and intensity increase according to the most likely future scenarios.
- Historical hydraulic data series in the area are available from the Ha Giang river gauge station: water level, 1960-1986, and 1994-2015; no data is available from 1987 to 1993, and discharge, 1960-1972. A Gumbel statistical distribution may be reasonably fit to the annual maximum water level data. These data seem to be quite uniform, and the Consultants understand that this is because of: (i) malfunction of the river gauge station—a study carried out by Dai Viet Consultant on Ha Giang river system embankments points out that, according to historical water level observations, Ha Giang station tends to underestimate water levels; and (ii) upstream regulation —PRC Malutang Dam⁵⁸ from 2005 to present, and Vietnamese small hydropower plants in the Mien River, from 2011 to present.

⁵⁷ In fact, during the field visit in Ha Giang City, some calculations and assessments on hydrology for dimensioning drainage networks using the Vietnamese Design Standard TCVN 7957:2008 were provided by local authorities.

⁵⁸ From 2007 to present, the Chinese Government has built a series of cascading reservoirs in the upper Lô River Basin, but more seem to be planned in the coming years; these facilities affect the flow regime downstream, especially during the rainy season.

Some care is advised when using these data in the detailed engineering designs, since there seems to be some inconsistencies.

- Hydraulic calculations for dimensioning urban drainage in Ha Giang city—which are drained by gravity—must take into account how high water levels in the rivers influence the hydraulic performance and effectiveness of the drainage system downstream.
- The future of the Chang causeway and spillway on the Me Stream should be reviewed. It is an obstacle, which enables flow to overtop the river course and flood settlements on the right bank. It would be advisable to consider relocating the spillway—used for diverting water for irrigation purposes—to an upstream location, outside the urban area. Since neither vehicle traffic nor pedestrians would use it, the spillway elevation could be lowered. Moreover, a diaphanous pedestrian bridge could be built where the spillway is currently located. This would prevent obstruction and flooding.
- Most of the proposed embankment designs use concrete. Alternative green solutions combined with rip-rap, using native trees and shrubs as well as earthen berms are feasible, if properly designed. The river is not an internal boundary within the city but a connecting part of it. Pathways or recreation areas could be developed along the watercourses. On the outskirts of town, environmentally and landscape friendly levees, including temporary floodwater storage and spreading areas—if necessary—could be considered.
- At the outlet of Quang Trung T3 drainage channel, there is a multi-storey building currently under construction, on the right bank of the Mien River. This building will be prone to flooding up to its third storey.

Additional non-structural measures—in particular, regarding DSS—should be implemented to improve environmental management and increase resilience to floods and other climate-induced phenomena. **Table 4-7** shows suggested measures, and includes practical recommendations to be considered.

Table 4-7. Non-Structural Measures to Improve Basin Management and Properly Address Flood Problems Existing in Ha Giang

Tools		Comments and Suggestions
Decision Support Systems (DSS)	Data acquisition network	<ul style="list-style-type: none"> ■ A monitoring network for measuring flow discharges in the Ha Giang river sub-basin should be implemented, considering both river branches: the Mien River—having several small hydropower plants—and the Lô River just downstream the PRC border. In the latter case, a water level-measuring gauge should be sufficient.
	Hazard and risk maps	<ul style="list-style-type: none"> ■ Flood-prone areas—hazard mapping—must be identified depending on water levels, since it does is not feasible currently to calculate them with different return period peak discharges. <p>A number of flood maps should be prepared for the range of water levels observed in historical events at 0.5m intervals. Each flood map should be associated with a related map of water velocities. The technology behind these maps, based on the use of GIS and 2D hydrodynamic models, is readily available.</p> <p>In terms of data for these maps, existing cartography is still deficient, and no detailed Digital Elevation Model (DEM) was available during the visit to the city. Hence, a new one could be built with data included in the CAD drawings used in the city. Using the mentioned information, a first computed version of flood maps will be approximate and will be updated in the future as cartographic information improves. Ha Giang could use these maps as a tool for disseminating flood alerts and take decisions aimed at minimizing damages.</p> <ul style="list-style-type: none"> ■ A desirable further step would be to prepare flood and landslide risk maps, combining hazard maps with vulnerable assets.
	Hydrological and hydraulic	<ul style="list-style-type: none"> ■ Implementation of a hydrological and hydraulic model for the Ha Giang river sub-basin —that is, considering both the Vietnamese and PRC

Tools		Comments and Suggestions
	models	territory. Although the model performance would be limited in case the PRC authorities do not provide rain and flow data, it would still be useful to estimate the hydrological response of the basin in natural flow regime conditions. Furthermore, the model would help in mid-long term to have a rough idea on the way the PRC dams are managed in dry and flood seasons.
	Reservoir management tools	<ul style="list-style-type: none"> The operation and the releases of Malutang Dam, in PRC, conditions the flows Ha Giang receives. Only the reservoir managers can make decisions and alert downstream users of upcoming events. Problems are similar in the case of the Mien River, but here there are no big dams; some river regulation results from the operation of small hydropower plants.
	Short-term weather forecasts/early warning systems (EWS)	<ul style="list-style-type: none"> Development of early warning procedures in case local meteorological events may not generate significant increases in main river water levels, but could induce flash floods in small streams and cause landslides.
Capacity building and public awareness		<ul style="list-style-type: none"> Capacity building and institutional strengthening of local government staff in climate change and environmental risk management, as well as DSS tools. Actions aimed to increase public awareness and improve education on disaster risk management.
Other tools		<ul style="list-style-type: none"> It is recommended that a Storm Water Management Master Plan—and a Waste Water Management Master Plan—be prepared to address the problem holistically, rather than adopting partial solutions. Because of the trans-boundary nature of the Lô River Basin, cooperation agreements between PRC and Viet Nam would be advisable to exchange and share data concerning hydrology and dam management—in particular, outflows from the PRC Malutang dam, preferably with the supervision of an independent international institution.

Source: PPTA Consultants.

Hue Screening

Thua Thien-Hue is recognised to be the most flood prone province in Viet Nam. Here, the main basin is that of the Perfume (Huong) River, some 2,830 km² in area, with mountainous headwaters, average rainfalls of 3,000-4,000 mm/year and a steep topography. The Perfume River drains to the Tam Giang coastal lagoon—a water body 60-70 km long, 2-8 km wide and with a surface area of 220,000 ha—and ends in the Bac Bo Gulf through the Thuan An Mouth estuary⁵⁹. This eases the conveyance and accumulation of water throughout the plains, where drainage is limited because of the presence of the Tam Giang coastal lagoon.

The city of Hue, the economic, political and cultural centre of the province, and former capital of the country, is located in the lower part of the Perfume River Basin, on a flat plain, 10 km away from the coast, and amid a system of interconnected rivers, streams, canals and lakes. The main waterway is the Perfume River itself, which crosses the town before draining into the Tam Giang lagoon. Other river branches and perimeter canals within the city are:

- The Bach Yen River and the Lap River, river branches that connect the Perfume River with the three perimeter canals of the Citadel, the main asset of Hue⁶⁰.

⁵⁹ Nonetheless, a second outlet lies 40 km southeast.

⁶⁰ The city has been recognised by UNESCO as a world cultural heritage site.

- The three perimeter canals themselves—Ke Van River in the SW, An Hòa River in the NW, and the Dong Ba River in the NE—that, in turn, flow back from the Citadel to the Perfume River.
- The Nga Ha canal, crossing the Citadel.
- The An Cuu River and the Nhu Y River, located on the right side of the Perfume River, opposite the Citadel.

Furthermore, a complex system of inner lakes and ponds lies within the Citadel, some with water retention capacity in the event of a flood.

Because of its geographic location and topography, Hue suffers from storms, floods, salt-water intrusion and droughts. In the low flow season, long periods of hot weather may result in the Perfume River ceasing to flow. Disasters triggered by storms and floods, some three to five times a year, are by far the most destructive. There are several causes of flooding: high water from the river basins, sea level rise—sea surge, local accumulation of rain, or a combination of all. The determinants are: (i) the basin configuration, where three main rivers—Huu Trach River, Ta Trach River and Bô River—with mountainous headwaters and roughly the same basin size, converge on a flat plain—the perfect flood prone scenario; (ii) a complex drainage network of rivers, streams, and canals; and (iii) very heavy rains—monsoons and typhoons trigger rainy events of very high intensities. The Tam Giang lagoon is an aggravating factor, since in case of a flood, it acts as a reservoir that hampers the outflow. This can worsen when combined with a sea level rise.

Figure 4-7. The TA Specialists In Climate Change, Flood Protection And DSS During A Field Visit to Thuan An Beach, In The Coastal Bar, Where A Dune Breach Occurred During The Flood Event From 1st to 6th November 1999.



Source: PPTA Consultants.

The most severe flood event occurred from November 1st to 6th 1999, when there was a 978 mm rainfall in 24 hours, and a water level of 5.81 m was recorded at Kim Long gauging station⁶¹, 2 km upstream of Hue City. In the last 40 years, at least four other recorded events also surpassed a water level of 4.50 m

⁶¹ This station has been traditionally used as a flood warning system, based on three threshold water levels (1.0, 2.0 and 3.5 m): floods up to 3 m are considered small floods; above this water level, there are medium floods (3-4 m) and large floods (> 4m).

at this station. Moreover, most parts of the city are flooded once the water level reaches 3 m at Kim Long station. Flooding is more frequent in the southern parts of the city, although there are also some flood-prone areas in the north, particularly those surrounding the Citadel—Phu Cat, Phu Heep and Huong So.

Initiatives related to flood protection and drainage include:

- Regulation of the Perfume River Basin through construction of dams: upstream of Hue, there are three, one in each main sub-basin—Huu Trach River, Ta Trach River and Bô River. Downstream Hue, and just upstream of the Tam Giang lagoon, is an additional barrage—Thao Long—with 130 automated sluice gates to prevent saline intrusion. These gates are opened when floods occur.
- River erosion protection works were planned in several reaches of the riverbank, over a total length of 75.4 km (Hung & Le Dien, 2012). Some have already been completed and surveillance is carried out from time to time.
- National funds were allocated in 2009 for upgrading coastal dikes from Quang Ninh to Quang—Decision No. 1002/QD-TTg, in particular in Thua Thien-Hue Province.
- In 2011, under the sponsorship of JICA, Thua Thien-Hue Province developed an Integrated Flood Management Plan (IFMP) of the Perfume River Basin to 2020, including flood hazard maps, a GIS database and flood simulation models. The IFMP is currently being reviewed. Among the set of structural and non-structural measures proposed in the IFMP (Table 4-8), some are still to be implemented or remain outstanding because of funding constraints.

Table 4-8. Set of Structural and Non-Structural Measures Proposed in the Thua Thien-Hue Province's Integrated Flood Management Plan (IFMP)

Type	Proposed Measure
Structural measures	Strengthening organizational capacities of Committee for Flood and Storm Control (CFSC) at provincial, district and commune levels.
	Formulation and revision of disaster risk management plans.
	Enhancement of flood and storm warning and forecasting capacity.
	Public awareness raising.
	Forestation and protection of forests.
	Strengthening of information and communication systems.
	Housing construction guidelines and land use regulations.
Non-structural measures	Enhancement of flood emergency response and recovery.
	Raising local roads submerged in extreme floods.
	Repairing and upgrading flood mitigation works—dikes, culverts, pump stations, dredging, riverbanks, coastal erosion, etc.
	Construction of auxiliary facilities—shelters, rescue centers, etc.

Source: JICA (2011).

- The updated Hue City's Master Plan to 2030 and Vision to 2050—funded in 2013 by KOICA—considers the creation of green strips along the main rivers and within urban areas. With lengths ranging from 2-3 km and widths spanning from 0.5-1 km, these areas are meant to strengthen flood retention and prevention. Restrictions to large-scale residential developments in flood-prone areas were also considered.
- Simple existing flood warning systems—based on Kim Long gauging station—have migrated to more sophisticated ones in the last few years. Currently, DSS based on semi-distributed hydrological models, coupled with probabilistic numerical weather prediction models, are being used for flood forecasting in the most flood-prone river basins in Viet Nam, including the Perfume River Basin. The National Centre for Hydro-Meteorological Forecasting (NCHMF) increases the frequency of hydro-meteorological data collection—from six to three hours, or even hourly—in the event of a risk meteorological situation, and a detailed follow-up is carried out. Information is provided to

regional/local authorities, which for Thua Thien-Hue Province, is the Department of Agriculture and Rural Development (DARD)—in charge of risk management at the province level—and the Provincial and City Committee for Flood and Storm Control (CFSC).

- Additional capacity building actions oriented towards implementing Community-Based Disaster Risk Management (CBDRM), mainly funded by Japan International Cooperation Agency (JICA).

Other interventions at a city level addressing local problems have been proposed, including: (i) dredging and embankment improvement of some of the minor river branches and perimeter canals; (ii) rehabilitation of the Citadel's inner lakes; and (iii) drainage improvement in some wards inside the Citadel. Some of these addressing flood management and urban drainage problems have been proposed for the Program (**Table 4-9**), along with other measures not directly related, which could potentially be affected by them—for instance, road developments crossing watercourses, which may improve evacuation routes during a flood event.

Table 4-9. Proposed Subprojects Which May Have Some Impact on Improving Flood Management and Urban Drainage in Hue.

Proposed Subproject	Key Topic
Dredging and embankment of Ke Van River	Flood protection
Drainage and pavements of four inner city wards in the Citadel	Urban drainage
Dredging and embankment of six lakes in the Citadel	Flood protection/pollution control
Dredging and embankment of Lap River, Kim Long Ward	Flood protection
Eco-channel of the An Van Duong Development Area	Urban drainage
Dredging and embankment of An Hoa River	Flood protection
Improvement of the Citadel Canal (Moat)	Flood protection
Rehabilitation / embankment of Dong Ba River	Flood protection
Rehabilitation / embankment of An Cuu River	Flood protection
Rehabilitation / embankment of Nhu Y River	Flood protection

Source: PPTA Consultants.

Key recommendations stemming from the review are:

- Calculations must take into account not only the Vietnamese technical standards—for example, design of sea dykes, Decision 1613/QĐ-BNN-MOST, July 9, 2012; and TCVN-9901-2014, or TCVN 7957:2008 Drainage and Sewerage—External Networks and Facilities—as required, but also the impacts of climate change—mainly, rainfall and intensity increase and sea level rise.
- Dredging of river branches and perimeter canals will improve water quality and drainage, but will not improve flood protection significantly. The dredging and the consequent drop in bed elevations will not diminish velocities—or decrease water levels, but could be a negative stability factor for embankments or structures in contact with the river.
- As far as possible, embankments should avoid concrete, and be made of rip-rap, masonry or other alternative, environmentally friendly, river bank structures.
- The water table is close to ground level in Hue and the surrounding areas. Any rise may quickly affect the drainage system. Moreover, any green infrastructure aimed at retaining and/or infiltrating water must be carefully studied.
- Bridge designs must ensure sufficient freeboard above the flood water level, and it must ensure the protection of piles against erosion—general, local and transient.
- Proper attention must be given to canal and drainage maintenance.

- The consultants preparing detailed engineering designs must properly assess and take into account the maintenance requirements and costs required to operate the hydraulic infrastructures, and the flood control and management systems.

Figure 4-8. Hydrometeorological DSS Used in the Thua Thien-Hue Disaster Management Coordination Center (DMC), Inaugurated in November 2014 and Sponsored by the United States Pacific Command & United States Embassy.



Source: PPTA Consultants.

But, protecting Hue city from extraordinary events requires a more comprehensive set of solutions which should be properly analysed in a study, but is beyond the scope of this PPTA. This is because the Perfume River hydrological-hydraulic system—basin-rivers-canals-lagoon-sea—is highly complex (Tuan et al., 2006). An overall approach on a basin scale is necessary to address the flood problems in the city. Only through such a study can all factors and elements within the basin affecting the city be taken into account. Local solutions reducing flood risk in a specific area might sometimes trigger other problems downstream, when they do not assess the interrelationship with the rest of the basin. Measures implemented upstream can alleviate flooding impacts and effects downstream—for example, reforestation of the headwaters areas.

Massive and expensive structural measures could possibly solve the problem in the future—flood gates closing the lagoon openings and preserving water levels inland, together with flood retention at the upstream reservoirs; non-structural measures; and particularly an enhanced DSS based on flood hazard and risk maps, a real-time data acquisition network, short-term weather forecasting and reservoir management tools. These are a more realistic and affordable approach to help address the problem.

In particular, both reforestation and improvement of basin management must be undertaken, since they can help mitigate the effects of a flood event. *Reforestation* of the mountainous areas upstream of the reservoirs increases the rainfall retention capacity, whereas reforestation of the coastal strip with mangles will help protect it against coastal erosion, and the lagoon and the city against typhoons and storm surges. The *improvement of basin management*, requires the optimal operation of the three large-

scale reservoirs—Ta Trach, Binh Dien and Huong Dien—since they have a flood control volume of 530 Hm³. This must be achieved combining experience and technological advancements. Providing the basin flood managers with a set of appropriate tools, is essential (**Table 4-10**).

Table 4-10. Non-Structural Measures To Improve Basin Management And Properly Address Flood Problems Existing in Hue.

Tools		Comments and Suggestions
Decision Support Systems (DSS)	Data acquisition network	<ul style="list-style-type: none"> The network of hydrometeorological and gauge stations transmitting real time hydrologic data has to be optimised and completed—in particular, upstream of the reservoirs—and will become one of the pillars of an enhanced DSS because it will be the input to other advanced decision tools, notably a reservoir management system. The real time network will provide information to decision makers, which will be used to trigger alarms, and help officials declare warnings and take measures on evacuations or road closures ahead of time. <p>The network must be <i>sustainable</i>, that is, designed and duly maintained to keep operating after floods and typhoons.</p>
	Hazard and risk maps	<ul style="list-style-type: none"> Improvement of hazard and risk maps with more complete and detailed information⁶², considering likely climate change effects and different scenarios of reservoir management and flooding events. Reliable flood hazard maps are able to show which areas will inundate for any specific water level in the city. A number of flood maps should be constructed for the whole range of water levels observed in historical events at 0.5 m intervals. Each flood map should be associated with an associated map of water velocities. The technology behind these maps, based on the use of GIS and 2D hydrodynamic models, is readily available.
	Hydrological and hydraulic models	<ul style="list-style-type: none"> Develop hydrological and hydraulic models enabling on-line monitoring of what happens in the basin, or to simulate, off-line, different scenarios.
	Short-term weather forecasts/early warning systems (EWS)	<ul style="list-style-type: none"> The opportunity of raising alarms will improve with the advent of a short-term weather forecasting unit relying on the data transmitted by the weather authorities. If weather forecast bulletins were available on a regular basis, an advanced flood early warning system could be built by linking data into the hydrological simulation results on hydraulic infrastructure management. It will take time to achieve this, but first steps could be taken towards its overall design.
	Reservoir management tools	<ul style="list-style-type: none"> Reservoir operation rules for all of the year apart from the flood season—which were already approved in 2014. Hydrology data—hydrographs—for different probabilities, together with dam-reservoir characteristics can be used to determine, through a conventional modelling study, the optimal dam operational rules which minimize dam releases and flow entering the flat area surrounding Hue. In practice, results can either be translated into graphs or built within a computer application. Where water levels and upstream discharges are available, the application could run on real time.
Capacity building		<ul style="list-style-type: none"> Capacity building of the flood management staff at province, district and city levels, to improve expertise in hydrology and hydraulics, databases, software use, management and decision making. Sufficient equipment should be provided.

⁶² Flood managers have already hazard and risk maps, which they use for decision-making and spatial planning.

Tools	Comments and Suggestions
Other tools	<ul style="list-style-type: none"> Improvement of the communication system. Flood management staff need more equipment—computers, software, etc. Ensuring funds are released for maintenance of hydraulic infrastructure and management and control systems.

Source: PPTA Consultants.

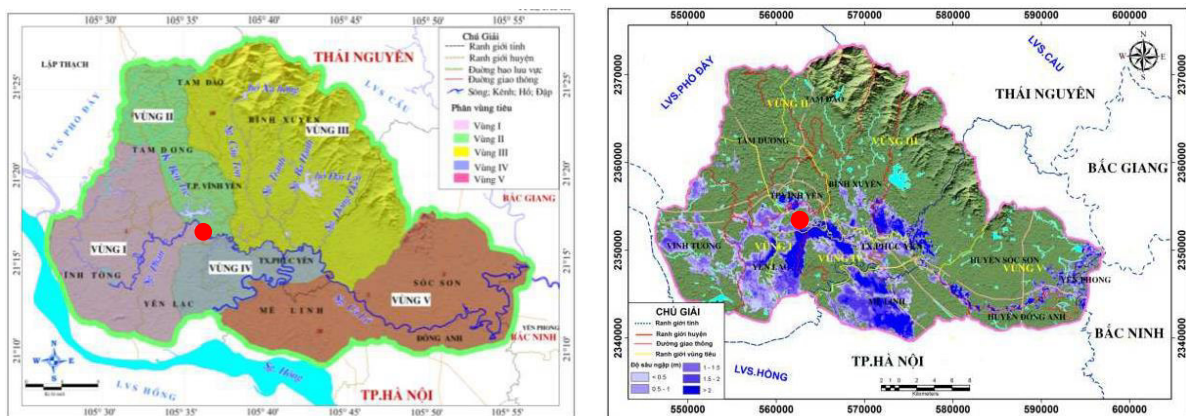
Some of the required tools probably exist, at least partially, but they need to be better organised and implemented. And the improvement of the basin management in Hue could be considered for a future loan (Porter, 2014). It is suggested that the preparation of the Terms of Reference for the improvement of the flood risk management in the Huong River Basin be one task of the overall capacity building component proposed for the implementation of the Program.

Vinh Yen Screening

Vinh Phuc Province is located in the industrial belt of the Northern Economic Region of Viet Nam. This water-rich zone, on the fertile alluvial soils of the Red River Delta, has a terrain gradually falling from the mountains in the northwest—Tam Dao—to the plains in the southwest and south. It has a total mean annual rainfall of 1,514 mm, almost 75% of which is during the rainy season, from May to September.

Vinh Yen City, the economic, political and cultural centre of Vinh Phuc province, is located on the transition between the mild-sloped terrain and the flat part of the province, with heights ranging from 10 to 50 m above mean sea level. Although two big rivers cross the province near Vinh Yen—the Red River and one of its main tributaries, the Lô River, the city is located in the Phan-Cà Lô River Basin—1,229 km², an independent and highly meandering system of small rivers which drain into the larger Cau River. The sub-basin affecting the city of Vinh Yen—number II in **Figure 4-9**—has an estimated area of 111 km². The city itself is embraced and bisected by several watercourses, canals and lakes: (i) The Phan River, which surrounds the city in the west and the south, and merges with the Cà Lô River, some 19 km downstream of Vinh Yen; (ii) The Cà Lô River river drains an area of 881 km², fed by streams in Tao Dao and Soc Don mountains, and flows 86 km to the east, until it reaches the Cau River; (iii) Cau Ton River, Trahn Dong River and Ba Hanh River, three watercourses draining from the Tam Dao Mountains, which are interconnected and flow through two branches, both to the Phan River and to the Cà Lô River; and (iv) Ben Tre Canal, a 12 km main irrigation channel draining to Dam Vac Lake, that is a large and non-stagnant water body located in the southern part of the city, with an area of 160 ha and a 14 km perimeter; it is also fed by the Khai Quang stream through the Khai Quang Lake.

Figure 4-9. The Phan-Cà Lô River Basin, where Vinh Yen (red dot) is located, is a complex hydrological and hydraulic system, highly prone to flooding (left); a simulation of a flooding event occurred in 2008 (right).



Source: Nguyet Minh (2014).

The configuration defines a complex and dense irrigation and drainage area. Dam Vac Lake, which faces pollution because of uncontrolled sewage discharges⁶³, is the main asset of the city. In the past it was partly used for irrigation, but now Vinh Phuc PPC is to take advantage of its ecological and landscape values, and are investing to exploit its tourism potential through several initiatives, a major urban development on the lake waterfront, among them.

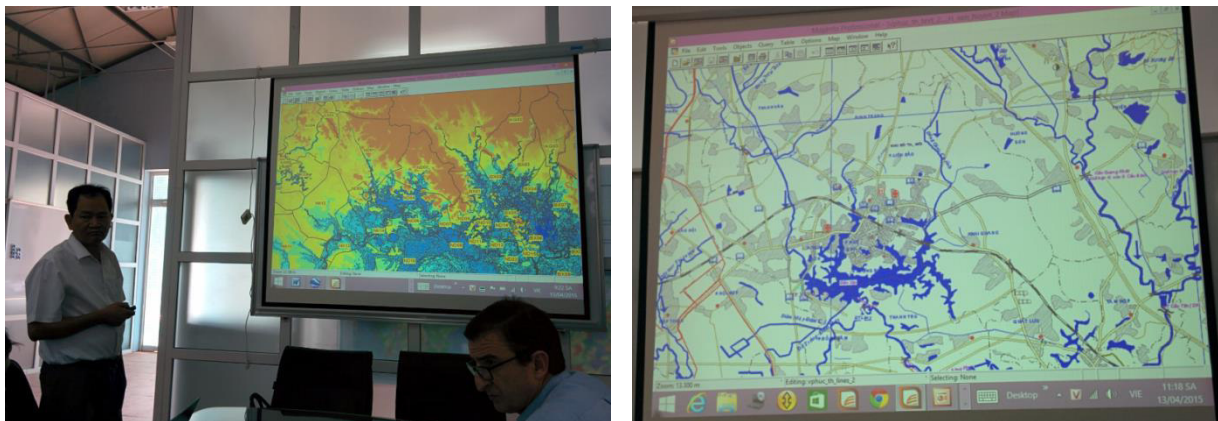
The combination of a flat topography and a dense hydraulic network entails downstream boundary conditions—the water level in the main rivers—affecting upstream river reaches, causing severe drainage problems, reverse flows and flooding. This poses serious challenges for flood management. Several areas, south and southeast of the city, are prone to flooding. According to local authorities, the normal water level of the Dam Vac Lake should be 7.5 m above mean sea level, and it overflows when it reaches 8.5-9 m, flooding some neighbouring areas. In the last 45 years, the lake's water level has exceeded 8.5 m. six times, and 9 m. four times. Data on historical floods and their impacts in Vinh Yen and the surrounding areas are relatively scarce, although the flood event of November 2008, when the whole Vinh Phuc Province and others in Central Viet Nam were affected, was an exception.

In the last few years, initiatives related to flood protection and drainage have been promoted; the most relevant ones are:

- The Dam Vac Lake originally had an area of some 400 ha. Today, because of anthropic pressures—landfilling, it has shrunk to 160 ha in the dry season, and 180 ha in the rainy season, taking into account flooded perimeter areas. Government wishes to preserve the surface water, while preventing the lake perimeter from being flooded. A levelled lake perimeter is under construction and will increase the water level overflow threshold, slightly reducing the frequency of flooding. The lake has a non-controlled outlet to the Phan River. But, this will be regulated in the future using a dike and a sluice gate that is currently under construction.
- In 1914, the French built a channel from the upper end of the Ben Tre Canal to the Phan River, upstream of Vinh Yen City, which enables the diversion and delay of water flows when necessary, since the distance to the city is much longer through the Phan River—more than 50 km—than through the Ben Tre Canal—12 km. When the Dam Vac Lake water level reaches 8 m or in the event of a flood, the diversion is activated.
- The Phan-Cà Lô Basin has a number of dikes from the Pho Day River and the Red River.
- The Plan for Red-Thai Binh Rivers flood prevention and control—approved by Decision No. 92/2007/QĐ-TTg, establishes design criteria—including flood flows and associated water levels—and proposes measures including dike strengthening and upgrading, flood diversion, dam operation or emergency response organization, amongst others. Vinh Phuc Province is one of the areas covered by this plan. Within this framework, the Viet Nam Institute of Irrigation (VII) drew up a flood prevention plan, 2008-2015, in 2010 for river dikes in the province.

⁶³ The city drainage comprises two separate networks (wastewater and stormwater). However, about 30% of the population is not connected to the sewage system, hence polluting the lake.

Figure 4-10. Examples of Decision Support Systems (DSS) Tools Used in Vinh Yen: Thematic Maps and GIS for Determining Flood-Prone Areas (Left); Schematic Model of Dam Vac Lake, local rivers and main hydraulic infrastructures (right).



Source: PPTA Consultants.

The Master Plan of Vinh Phuc Urban Area until 2030 and Vision to 2050 (Vinh Phuc PPC, 2011) includes several measures related to flood protection, including:

- Use of the Sau Vo Lakes, south of Vinh Yen, to retain water during rainy periods, helping to manage floods. From these lakes, water would be pumped to the Red River (see **Appendix 5**).
- Rehabilitation of Phan River, Cà Lô River, and a branch of Cà Lô River in the urban region.
- Separate sewers in all new urban developments.
- Implementation of green infrastructure and low impact development principles in the inter-urban space. This covers the temporary water storage in the Sau Vo Lakes, and the provision of green areas to reduce rainfall runoff, and for their leisure values.

More recently, the World Bank (WB) has supporting some initiatives to address basin-wide drainage problems. The WB-funded *Vinh Phuc Flood Risk and Water Management Project (P152460)* is focused, amongst others, on supporting structural measures for flood control and river rehabilitation, flooding and emergency response systems, and capacity building in integrated river basin management. In particular, Component flood risk management—will fund:

- The construction and rehabilitation of retention lakes to increase capacity, including the Sau Vo Lakes.
- The construction of three drainage pumping station groups to divert water from the Phan-Cà Lô River Basin in the western and southern surroundings of Vinh Yen to other basins, in:
 - Kim Xa (1 and 2), with capacity of 45 m³/s each, and an outlet sluice gate to Pho Day River, in the west.
 - Ngu Kien (45 m³/s), an outlet sluice gate, and 2 km of an outlet canal to Red River, in the south.
 - Nguyet Duc (75 m³/s), a 7.5 km inlet canal connecting to Sau Vo Lake, an outlet sluice gate, and 2 km of an outlet canal to Red River, in the south.
- Dredging 18 km of the Phan River lower section to improve flow capacity.
- The construction of two flood control gates and related embankment works in Cáu Ham Rông—in the river branch connecting the Cau Ton River and the Trahn Dong River to the Phan River—and Cáu Sat—downstream the Phan River and Cà Lô River junction. These are meant to prevent reverse flows from affecting upstream Phan River and Vinh Yen City (see **Appendix 5**).

Furthermore, other measures are proposed by the local authorities for flood control and drainage focused on Vinh Yen city, which complement those funded by the WB. These include (**Table 4-11**) the dredging of 35 ha out of the total 160 ha, and landscape conservation of Dam Vac Lake. Two other subprojects concern environmental sanitation, and will help reduce pollutant loads currently being discharged into the Dam Vac Lake.

Table 4-11. Proposed Subprojects Which May Have Some Impact on Improving Flood Management and Urban Drainage in Vinh Yen

Proposed Subproject	Key Topic
Dredging and landscape protection of Dam Vac Lake	Flood protection
Wastewater collection and treatment in west Vinh Yen	Pollution control
Tertiary wastewater sewers	Pollution control

Source: PPTA Consultants.

On a basin scale, the future implementation of the proposed structural and non-structural measures will improve the overall basin flood management, hence reducing flooding and damages. On an urban scale, Vinh Yen flooding problems are unique since the Dam Vac Lake is the focal feature of the city. During floods, the city needs not only to maintain a reasonable level at the lake, but also reduce the flooded areas to a minimum. To achieve this double objective, the city relies on essential structural measures aimed at diverting flood waters, which would normally feed the city lake to the Phan River, through a gated canal. Several sluice gates also are in operation, which prevent back-flows from neighbouring streams, thus reducing the base water levels and improving the drainage of flood waters. But other needed structural measures are not in operation, and although there are plans to construct a dike, which would increase the operational level, and dredge the lake and the Phan River, no sluice gates are being designed for managing the water levels in the lake. The regulation of the Dam Vac Lake outlet would guarantee a 7.5 m fixed water level.

Key findings and practical recommendations are given below which should be taken into account during detailed engineering design:

- A levelled lake perimeter, which is under construction, will increase the water level overflow threshold, slightly reducing the lake overflow frequency. Thus, the lake operation leeway will depend on the difference between the existing water level and the levelled perimeter edge—outflow threshold, that is, from 7.5 m to 8.5-9 m—meaning roughly 1.6 to 2.4 Hm³. In the event of a flood, this volume could be increased, lowering the lake water level in advance from the ordinary 7.5 m fixed value.
- Lake dredging alone is inefficient from a flood management standpoint. It is an environmental issue. Furthermore, dredging could affect the stability of dikes. Hence, the reinforcement of the embankment toes should be addressed.
- The lake management approach must consider the lake as a reservoir—volume in, discharge out and water level evolution. The Dam Vac lake outlet must be designed to enable management operations.
- The construction and completion of the city sewage system will improve water quality and reduce the presence of water hyacinths in Dam Vac lake.

In addition to above structural measures, other non-structural measures are required. In particular, enhanced DSS tools would positively help the authorities tackle the flooding problem and alleviate damages. These non-structural measures are outlined as **Table 4-12**.

Table 4-12. Non-Structural Measures to Improve Basin Management and Properly Address Flood Problems Existing in Vinh Yen

Tools		Comments and Suggestions
Decision Support Systems (DSS)	Data acquisition network	<ul style="list-style-type: none"> ■ Even at the scale of the Phan-Cà Lô River Basin, Nguyet Minh (2014) points out that the existing hydro-meteorological network is insufficient for flood warning purposes, and restoration and construction of new gauging stations would be desirable, along with the allocation of appropriate funds to operate and maintain them.
	Hazard and risk maps	<ul style="list-style-type: none"> ■ Flood hazard maps have been produced by local authorities (see Appendix 5) based on water levels in Dam Vac lake. However, flood risk maps—considering in addition assets and their

Tools	Comments and Suggestions
	<p>vulnerability—would be advisable, especially considering the proposed urban development surrounding the lake. Reliable flood hazard maps are able to show which areas will be flooded for any specific water level in the city. A number of flood maps should be constructed for the range of water levels observed in historical events at 0.5 m intervals. Each flood map should be associated with a corresponding one of water velocities. The technology behind these maps, based on the use of GIS is readily available. The preparation of these maps with existing cartography is dubious, since no detailed Digital Elevation Model (DEM) is available. The GIS layers used for managing the hydraulic system saved in MapInfo files can act as a first source of information. The layers allow the delineation of the extent of flooding by using the contour lines, since flow velocities are negligible in the city. This information can be taken as a first version of detailed flood hazard maps. The information lacks detail but could be refined as new cartographic data becomes available.</p>
Hydrological and hydraulic models	<ul style="list-style-type: none"> ▪ Large-scale, hydrological and hydraulic, DSS have been implemented in the Red River Basin (Van Diep et al., 2007; Ranzi et al., 2012), and are used for flood forecasting and warning, but they do not appear to cover the Phan-Cà Lô River Basin in sufficient detail. Although some relatively detailed hydrological and hydraulic models have been implemented recently for this sub-basin (Nguyet Minh, 2014), further models are required.
Short-term weather forecasts/early warning systems (EWS)	<ul style="list-style-type: none"> ▪ Predicting flood events will improve once a short term weather forecasting system based on real time data—from real time monitoring gauges or issued by weather authorities—is in operation. Under these circumstances, an advanced flood early warning system could be built by linking data into the hydrological simulations results needed for sluice gate system management. The development of such a system would be a long-term objective.
Reservoir management tools	<ul style="list-style-type: none"> ▪ The Dam Vac Lake acts as a natural reservoir. Its capacity equals the volume that can be stored in the natural terrain. The volume can be computed using flood hazard maps. Hydrological data—hydrographs in the river sources feeding the lake and the neighbouring streams—for different probabilities together with sluice gates or natural lake outlet characteristics can be used to foresee the effect of control on lake levels through a conventional reservoir model. Results can help decide when to divert upstream flows to the Phan River and how to operate the gates to control the release of water in the lake. Such a study should be undertaken as soon as a subproject on sluice gates is added. The hydrological data needed for this—precipitation and river discharge in upstream water sources—are not available. The hydrometric network should be extended to include the needed gauges as soon as possible.
Capacity building and public awareness	<ul style="list-style-type: none"> ▪ To respond to the challenges posed by evolving environmental conditions and climate change, city and provincial departments must be strengthened and their capacity building needs addressed. This is crucial for ensuring an effective implementation of the GCAP. ▪ Furthermore, the involvement of local communities in disaster risk management should be encouraged through the adoption of the CBDRM model, which has proven successful in other

Tools	Comments and Suggestions
	Vietnamese cities.
Other tools	<ul style="list-style-type: none"> It is recommended also to draft a Storm Water Management Master Plan—and a Waste Water Management Master Plan—to address the problem from a holistic approach, instead of adopting partial solutions.

Source: PPTA Consultants.

4.3.2 Subproject Technical Engineering Aspects

This section summarises the technical assessments of the subprojects while more details are contained in a separate volume, titled **Subproject Data Sheets (Volume 3)**.

Ha Giang Subprojects

At initial evaluation, Ha Giang subprojects included three drainage projects, four embankment rehabilitation projects, five roads subprojects for rehabilitation, one major city redevelopment scheme, one bridge, solid waste landfill improvements and a water supply component. The final list was cut down to ten.

Drainage. Three subprojects are included to improve city drainage for wards of Tran Phu and Nguyen Trai; for areas T1, T2, T3 and T4 in Quang Trung Ward; and Minh Khai ward. A network of 14 streams flow from the surrounding mountains to Lo River and Mien River. They constitute a green link between the surrounding mountains and the Lo and the Mien Rivers. The streams are combined sewers collecting storm water and wastewater, and have been encroached by houses, resulting in reduced width and flow capacity, and increasing flood frequency. Solid waste is dumped in the stream. The Program subproject involves cleaning and rehabilitating the primary storm drainage system and providing open space for the community. An ongoing DANIDA-financed project involves the construction of a separate waste water collection and disposal system. It aims to collect and treat 80% of wastewater of the city, and is planned for completion in 2020. A new wastewater treatment plant (WWTP) will be built. The original subproject had a storm-water drainage component but this was dropped because of limited funds.

Embankment rehabilitation. This covers the western embankment of Lo River—from Goc Gao to new Me Bridge; embankment and roads for two sides of the Mien River—from Suoi Tien-Bridge 3/2; southern embankment of Me Stream—part from old Me bridge to Chang spillway; and the embankment of Nam Thau Stream—from Quyet Thang to Mien River. Embankment designs originally had a vertical or slope masonry and concrete construction. But a fully reinforced concrete embankment may not be necessary. Greener solutions were suggested for embankments on the inner meander—riprap protection, reinforced structural terraces with trees and vegetation—less concrete. The embankment slope, material and shape should be adapted to water velocity. Walls should include a natural finish. Masonry material should be used instead of concrete to allow for terraces and vegetation. Solid waste dumping should be discouraged through the provision of landscaped areas, linear paths or roads. The runoff drainage solution from roads and upstream should be improved to reduce landslide risks. And the embankment improvements should be integrated with the improved road subprojects, bridge, and the proposed green belt to protect the quality of the Lo River and connect green hubs. Three embankment projects have been prioritized—western embankment of Lo River, section of Goc Gao to new Me Bridge; embankment and roads on both sides of Mien River, section from Suoi Tien to Bridge 3/2; and the southern embankment of Me Stream, from old Me bridge to Chang spillway.

Roads. These subprojects included the upgrading and expansion of National Road No.2—from Km 286+300 to the new Me Bridge; southern ring road; Phung Hung road—from Tien Stream – bridge 3/2; road from Phong Quang bridge to the Ha Phuong water park; upgrading and expansion of Xuan Thuy road; upgrading of road from Quyet Thang to Son Ha; upgrading of La Van Cau Road; and a bridge—connecting National Road No.2 to the southern ring road. Improvements to National Road No. 2, the bridge and the southern ring road could be combined into one subproject, along with improvements to the south embankment of the Lo River, including the proposed linear park—green belt. This would provide the opportunity for greening, and improve access to a nearby bus station making an attractive entrance to the city in the south. The consultants suggested a review of road widths, with a view to downsizing,

improving landscaping, and introducing low impact development (LID) features into the design. The demand for the upgrading of Xuan Thuy and La Van Cau roads should be reassessed, and depending on the intended function, roadside pavements, lighting, and tree planting on either side may be considered. Upgrading of the city centre roads involves road resurfacing, pavement improvements, street lighting and landscaping of some 59 separate sub-components, covering 25kms of road. A comprehensive approach to upgrading is needed—roads, streetscape improvements, rationalisation of street furniture and some tree planting, drainage improvements with rain gardens and retention, and pavement widening only when required. Only three of these road subprojects have been included under the Program—upgrading of National Road No 2; southern ring road; and the River Lo bridge.

Solid waste management. This involves the expansion of the solid waste landfill site located in a scenic area on the south eastern edge of the city. One cell is closed and has been covered with topsoil and vegetation. There is no ground water monitoring. The existing operating cell is seven years old and half full, and has a polyethylene impermeable curtain that stops leachate infiltration. There is no monitoring of the membrane, and it is damaged. The area of the expanded landfill is planned to be five hectares—from its current two hectares—and one more cell will be added. Monitoring results of the nearby river downstream show that its water quality does not comply with environmental standards. The review of the subproject indicates that, as proposed, it needs to be revised considerably to ensure environmental sustainability. Nevertheless, this subproject has been included in the final list.

Water supply. The current system includes one water intake, two filtration plants, two deep wells, 22.7 km of primary pipes—100 to 300 mm diameter—and 103.3 km of secondary pipes—less than 100 mm diameter. The main filtration plant was built in 2004; capacity is 6,000 m³/day. A second filtration plant was built in 1998 with a capacity of 1,500 m³/day. Two wells are in operation at peak time and each supplies 620 m³/day to the network, but they should be decommissioned since there is no disinfection, and are too accessible to contamination. Total production capacity is 8,120 m³/day including the wells. Excluding unaccounted water, average consumption in 2014 was 95 liters per day. The mean production of the plants and wells was 8,583 m³/day compared to a maximum capacity of 8,120 m³/day for the two plants. A new plant is required and could be proposed under the Program. It should be designed to reach maximum capacity on the peak day of the year—presently 1.5 times the average or 8,917 m³/day. The life of the WTP should be designed for 20 years with a capacity of 12,000 m³/day. The subproject has been removed from the Program and will be proposed for funding from other sources.

Further descriptions of the proposed subprojects, and the recommended green elements for inclusion are shown as **Table 4-13**:

Table 4-13. Ha Giang Subproject Assessment Synthesis

Subproject	Description	Recommended Sustainability and Green Elements
Drainage for Tran Phu and Nguyen Trai Wards	Involves the cleaning and rehabilitation of the primary storm drainage system—streams—in the two wards. It will prevent encroachment, the disposal of refuse, and will increase flow capacity, thus eliminating flooding and reducing pollution.	These streams form a green link between the mountain and the Lo River. This an important green element of the Program enabling a green corridor to connect hubs, the mountain and rivers. All are naturally vegetated by trees on each side. An ongoing project financed by DANIDA is supporting the construction of a separate wastewater collection system. But because of limited funds, storm drainage component was dropped.
	This is a green subproject that should improve drainage and reduce flooding. It should be implemented as designed.	
Drainage for Minh Khai Ward	Involves cleaning and rehabilitating the primary storm drainage system to increase flow capacity, eliminate flooding and reduce pollution	In 2014, there was flooding to a height of 60 cm. The system constitutes a green link between the mountains and the Lo River which is naturally vegetated on each side. This an important element of the wastewater program and can become a green corridor connecting to hubs, mountains and rivers.

Subproject	Description	Recommended Sustainability and Green Elements
	This is a green subproject that should improve drainage and reduce flooding. It should be implemented as designed.	
Drainage of T1, T2, T3 and T4 within Quang Trung Ward	Involves cleaning and rehabilitating the primary storm drainage system in Quang Trung ward to help prevent encroachment and the dumping of garbage. It increases flow capacity of the narrow channels eliminates flooding and reduces pollution.	These drainage streams form a green link between the mountains and the Mien River which is naturally vegetated on each side. This is an important element of the program—a green corridor connecting to hubs, mountains and rivers.
	This is a green subproject that should improve drainage and reduce flooding. It should be implemented as designed.	
Western Embankment of Lo River.	Involves the improvement of the embankments along National Road No.2 along the River Lo's western bank for 950 m. The proposed embankments have a 1.5 to 2 slope and are proposed to be reinforced conventional concrete plates for the underwater part and two vegetated terraces for the top.	Greener solutions are suggested on inner meander—riprap protection and reinforced structural terraces with trees and vegetation. This should be part of a conservation corridor along the river.
	The subproject needs to be improved, by using less concrete; adapting the embankment slope, material and shape should to match water velocity; and by providing a more natural finish to the walls. It should be included but with the suggested green features added.	
Embankment and Roads on each side of Mien River	Covers improvements of 4.5 kms of embankment on each side of Mien river, from Phung Hung Bridge to bridge and the construction of the new Phung Hung road	The embankment associated with this road is a green belt and could be a linear park at the entrance to the city.
	The embankment improvements should be integrated with the nearby improved road, bridge, and green belt to ensure river quality and connect green hubs on both sides. The final design should consider soil conditions, water velocity, and material resistance. The subproject should be included under the Program.	
Southern Embankment of Me Stream	Embankment works along the eastern edge of Me River are proposed from the old Me Bridge to the River Lo confluence to meet the western embankment works of the above subproject—1.61kms. The scheme should involve a linear park/landscape, pedestrian route along the embankment that incorporates existing trees in the northern section.	This project should enable the preservation of a green corridor along the river.
	This landscape pedestrian route/linear park should integrate existing trees, and add some others where needed, lighting and seating—with occasional shelters—along a corridor width of 5-10m The emphasis would be on design for a natural environment. The subproject should be implemented, but with improvement that incorporate the linear park.	
Improvement of Existing Landfill	The existing landfill area is planned to be increased from its current two hectares to five hectares. One more cell (2 ha) will be added. When full the existing cell will be covered with topsoil and planted with trees to match the surrounding natural forested environment. The existing leachate treatment plant would be upgraded with biological—aerated—treatment. A new service shed and building will also be built.	The existing site does not include leachate collection and efficiency treatment. The monitoring results in the downstream river show that the treatment is partly efficient but does not comply with environmental standards yet, the stream is polluted as domestic wastewater—Coliforms 17 900mg/l, COD 363mg/l, BOD5 190mg/l, source: DONRE Runoff water from surrounding hills goes to a conventional drainage system around the operating cell and discharges downstream. No monitoring of water quality is undertaken.

Subproject	Description	Recommended Sustainability and Green Elements
	The landfill is located in a scenic area on the south eastern edge of the city. The subproject needs improvement and better monitoring; but is recommended for implementation subject to additional features to reduce potential adverse environmental impacts.	
Upgrading of National Road No.2.	This includes 1.23 kms of dual carriageway road within a 25m corridor. Includes two 7.5m carriageways, separated by a 2m planted median strip and 4.5m pavement area on either side.	The road should include low impact development drainage—bioretention swales, vegetation and trees. This road is the main entrance to the city, and should incorporate green features and become a welcoming entrance to the city
	The subproject should be implemented but with improvements—more green.	
Southern Ring Road	This is proposed as a by-pass road on the south eastern side of the city and will be built from the River Lo Bridge, and National Highway No 2 to the southern edge of the city centre. The total length of proposed section is 2.936 km	The design should be revised to include low impact development, drainage—bios wales—and vegetation, trees. For better safety, clear marking of a cycling lane on carriageway should be included.
	The proposed new ring road should be included in the Program.	
Bridge from National Road Number 2 to the Southern Ring Road.	The bridge would be the third crossing of the River Lo in Ha Giang. It will have a width of 18m and a length of 150m and would connect National Highway No.2 with the new Southern Ring Road	Pedestrians and bicycles should be included, in the designs of the carriage way. The bridge links the two banks of the river.
	The bridge should include pedestrian and bicycle lanes, and enlarged to accommodate them. The separation of lanes should be marked and enforced—pedestrians, bicycle, motorbikes, and cars-trucks-buses. The subproject should be included but with improvement.	

Source: PPTA Consultants

Hue Subprojects

The initial evaluation Hue subprojects included dredging and embankment improvements—Ke Van river and Xa Tac lake, a drainage component in four wards of the Citadel, nine road subprojects, bus and truck stations, and solid waste management improvements. The two dredging subprojects were justified by the need to remove sludge from the Ke Van River and Xa Tac Lake. But in both cases, the proposed embankment design required improvement to include more green features. The drainage proposals for the Citadel area should involve interlinked channels with a connection to a storm water gravity pumping station. Surface retention measures should help to drain the streets during strong rains. The subproject should include the rehabilitation of the roads, but expansion of the width of streets should be minimised.

All the road designs were over dimensioned, and required a more thorough technical assessment and justification through appropriate traffic studies and modelling. Rehabilitation of the roads in the commercial and tourist areas, should consider measures for pedestrians, and limits should be placed on their widening. The bus and truck stations require appropriate demand studies, including traffic projections and an assessment of public transport needs to better size the facilities. The proposed solid waste management subproject satisfied the criteria for green city investments and is supportive of the Program objectives.

After the first assessment, in July, Hue PMU prepared a new list of projects. They dropped 11 subprojects and submitted a list of 12 new ones. These were submitted to a new assessment, and the introduction of green features was promoted, although it is still an issue in design. A description of the proposed subprojects identified in the final list, and the recommended green elements for inclusion are shown as **Table 4-14**.

Table 4-14. Hue Subproject Assessment Synthesis

Subproject	Description	Recommended Sustainability and Green Elements
Dredging and Embankment of Ke Van River	This subproject aims to improve Ke Van River hydraulics and environment. Ke Van River is a manmade canal, and derives its water from the Huong River. The subproject has two components—dredging the canal, which will improve flow and environment quality of the Huong River; and strengthening the embankment on the east side of the river to reduce erosion from stormwater.	Greener solutions were proposed. Typical cross-section with various green features was recommended to satisfy green cities environmental objectives.
	The subproject should be included under the Program with improvements and the inclusion of a continuous green corridor along the river.	
Drainage and Pavement in Four Inner City Wards of Citadel	Involves upgrading and rehabilitating primary drainage systems to improve flood drainage capacity, and increase water conveyance. Rehabilitation of streets to improve traffic flow in the citadel and improving the landscape and lighting.	Low impact development features were introduced in the design. A close network with a central pumping station is added to the subproject to control flood occurrence.
	The subproject is recommended, with improved design as agreed with PMU; it should also retain the narrow streets to reduce vehicular traffic flow.	
Dredging and embankment of Lakes in Citadel	The subproject will improve the condition of the lakes; it has three components—lake dredging, lake embankment and drainage improvements.	Green objectives are to restore the lakes, intercept wastewater, prevent erosion by constructing embankments and improve landscaping.
	The subproject should be included, but with an improved design. The original subproject proposal has been improved and includes a one-meter wide path around all lakes for access and maintenance. However, the paths are not considered as a linear greenbelt since no landscaping or lighting has been included. This should be rectified.	
Water Supply System to Phu Son Solid Waste Management Facility and Villages	Involves providing water supply to a proposed solid waste recycling plant that will be built on a 40 ha site in Huong Binh commune, and the nearby villages.	This subproject will support recycling of solid waste, and will bring water to surrounding villages.
	This project should be implemented as designed, but could be included in ADB's water supply investments with the Hue WACO.	
Dredging and Embankment of Lap river , Kim Long Ward	Aims to improve Lap River hydraulics and environment. It has two components—dredging the river to improve flow from the Huong River and its environment quality; and strengthening the embankments on both sides of the river.	It will improve the green corridor along the river. A greenbelt has been added to the original design, and shoreline landscaping has been included to improve the embankment
	The subproject should be included under the Program, with the improved design as presented by PMU and summarised above.	
Eco-Channel at the An Van Duong Development Area	Involves the construction of a green area in An Van Duong. This proposed canal would link the An Cuu River in the south to a tributary of the Nhu Y River in the north. It would run, in a dog-leg alignment for 1.7kms, through the southeaster part	The subproject provides an opportunity to demonstrate green infrastructure and low impact development features.

Subproject	Description	Recommended Sustainability and Green Elements
	of the planned An Van Duong Development Area.	
	The linear park landscaping design is not well developed, and a landscape architect should be involved in the final design to introduce greener features and infrastructure. The project should be implemented with an improved landscape design.	
Dredging and Embankment of An Hoa River	The subproject has three components—dredging the river to improve flow from the Huong River and its environment quality; strengthening the embankment on both sides of the river to reduce erosion from storm water; and the construction of boardwalk—3 meters wide.	The subproject aims to improve An Hoa River hydraulics and environment. A green corridor should be included and green infrastructure features should be added.
	This project should be included but with an improved design.	
Improvement of the Citadel Canal/Moat	The subproject has two components—dredging the canal up to 2 meters deep for 8.5 km; and repairing the embankment of both sides of the canal to reduce erosion from storm water.	It aims to improve the environment of the moat around the citadel. It can be seen as an eco belt around the citadel that should be preserved
	This project should be included as designed	
Park, Paths, Drainage, and Lighting in An Van Duong Development Area	Involves landscaping along roads in new developments of An Van Duong. Two major roads have been built, but only the carriageways have been constructed. Involves integrating the sidewalks, traffic signs, landscaping, drainage, lighting, parking, and developing a linear park within the median of the existing road sections	Provides a good opportunity to introduce low impact development features. The revised basic design has integrated some green features, including bioretention swales for stormwater drainage. They have also integrated LED lighting.
	The subproject is recommended only with an improved design. The landscaping design is in a conceptual design phase and road traffic safety and safety of park users should be considered at final design stage.	
Park and Square in Administration Area, An Van Duong	The construction of a public square in the new An Van Duong Development Area. The development has an area of 17.23 ha and is located in the A zone of the area. It is the green component of the scheme.	Provides an excellent opportunity to demonstrate green infrastructure features and low impact development. However this needs to be incorporated into the design.
	The conceptual design shows large surface area of roads, official buildings and uniform landscaping of straight rows of trees. No green features or techniques have been demonstrated in the subproject documents. The subproject requires a revised conceptual design before it can be included in the Program.	
Rehabilitation/ Embankment of Dong Ba River	This involves improving Dong Ba River with new landscaping, since the embankment has been built on both sides. It has two components—construction of boardwalk along the embankment, about 3 meters wide, and 640m length; upgrading of lateral roads along the embankment, and the construction of a drainage system.	The scheme should include a green corridor along the river with low impact development components.
	This subproject should be included only after a new design has been prepared incorporating low impact development features.	

Subproject	Description	Recommended Sustainability and Green Elements
Rehabilitation/Embankment of An Cuu River	Involves embankment works along part of the northern bank of An Cuu River in the Cung An Dinh area, between An Cuu Bridge and Nhu Y tributary. The repair work to existing walls would apply to 119m of the north bank with a further 457m of new embankment strengthening works. The retaining walls would be in stone with a low parapet. The subproject also includes landscaping of two linear parks—200m in length and up to 25m wide,	This subproject aims to improve the environment of the An Cuu River. A boardwalk with vegetation would improve the quality of design and become a green corridor.
	This subproject should be included only after a new design has been prepared incorporating low impact development features.	
Rehabilitation/Embankment of Nhu Y River	Involves structuring the embankment of the east side of the river to reduce erosion from storm water. The objective is to complete the rehabilitation of the embankment of river.	This sub-project aims to improve Nhu Y River hydraulics and environment. A new green corridor along the river would improve the embankment
	The embankment design has been slightly modified to include a lighter slope and vegetation. No green drainage has been integrated and the boardwalk is narrow and pretty nude. Additional vegetation, landscaping and seating would be more welcoming for pedestrians. The subproject can be included, but with an improved design.	
Section of Central Road in An Van Duong Development Area including Bridge	The subproject involves constructing a road to connect two parts of the city. Part of this 100m-wide road was built in 2014—one section in Master plan Area A and one in Master plan Area B.	The design needs to introduce a conservation corridor, and low impact development.
	Redesigning the landscape and footpath along the central of median should be considered. Pedestrian crossings need to be carefully designed. The road dimensions, speed limit and access should be designed according to standards of an urban road. No proper justification is given for the current highway design. This subproject needs redesigning to be included in the Program.	
Bui Thi Xuan Road	Involves increasing the width of an existing rural road from 3.5 meters to 10.5 meters, and building a small bridge—25 meters long. The road will connect Huyen Tran Cong Chua Street to Luong Quan Street—2,994 m.	This area has many historic monuments, and the road will improve access to them and traditional garden houses protected by the provincial government. Landscaping will include trees and lighting. The road cross section has been reduced from 19.5m to 13.5m by reducing the driveway from 10.5m to 7.5m and the sidewalk from 4.5m to 3.0m. Some bio-swale drainage has also been added. A secured bicycle path has also been added on one side.
	The subproject should be included as per the improved design.	
Huyen Tarn Chua Cong Road	The subproject is to connect Bui Thi Xuan Street to Vong Canh Hill—4.17kms—by upgrading an existing road. This would improve the link between Bui Thi Xuan Street and Vong Canh Hill. Road widening increases width from about 3.5m to two carriageways of 5m each plus pavements of 3m on either side—total	This road will improve access to two important monuments located at Lang Tu Duc temple. The objective is to develop tourism, accessing garden houses, and connecting to the south to National Highway No.49A. The existing greenways should be preserved

Subproject	Description	Recommended Sustainability and Green Elements
	corridor of 16m.	
	The subproject should be included according to the improved design.	
Vy Da Bridge and Access Road	Upgrading Vy Da Bridge and its approaches on Pham Van Dong street. The bridge across the Nhu Y River will be reconstructed, and there will be improvements and widening of the approach road—Nguyen Sinh Cung Street—on the north side up to an existing major junction with Nguyen Phan Chanh	The subproject incorporates a renovated park constructed halfway between Pham Van Dong and Nguyen Phan Chanh. The approaches to the bridge should include low impact development features. Pedestrian crossings should be considered when combining with traffic lights at intersections
	This subproject should be included according to its improved design.	

Source: PPTA Consultants

Vinh Yen Subprojects

The initial evaluation of the subprojects of Vinh Yen included Dam Vac Lake and park improvements, sanitation improvement, road developments, institutional strengthening, and an industrial logistics center. From the original list of 18 infrastructure subprojects, seven were selected for inclusion in the Program.

The *Dam Vac lake improvements* involve dredging, construction of an embankment on one side and along the river discharge—Pham River—and the development of a park adjacent to lake. Although the subproject is generally acceptable, it has been modified to improve its green features.

The *sanitation* component covers two subprojects—the completion of secondary and tertiary wastewater sewers in four wards currently connected to a new wastewater treatment plant; and the construction a wastewater collection network in three wards with connections to a new wastewater treatment plant to be built under the subproject. All combined storm water and wastewater systems flow to Dam Vac Lake. Proper collection of wastewater and its treatment it is essential to maintain water quality in Dam Vac Lake—the main green hub of the city.

The *road development* subproject involves a new road around the proposed university village. It has been downsized from its original design and green features, incorporated, such as bioretention swales. The road subproject included is now just one lane of the arterial road.

A description of the proposed subprojects, and the recommended green elements for inclusion are shown as **Table 4-15**.

Table 4-15. Vinh Yen Subproject Assessment Synthesis

Subproject	Description	Recommended Sustainability and Green Elements
Dredging and Landscaping Protection of Dam Vac Lake	This includes dredging the lake—removing 50cm of sediments, and dredging a deeper portion along its center line to make a canal towards the lake outlet to Phan river. Phan River will be dredged and two new embankments will be built from the lake outfall along the National Highway #2. The subproject also includes dredging and embankment works of a western branch of Phan River.	This green infrastructure investment—for the main green hub—is designed to improve flood control, and improve surface water quality. The lake is used to promote tourism development and recreation activities. It is a major environmental area of the city.
	Dam Vac lake is the heart and the main green hub of Vinh Yen City. It should go ahead but with an improved design.	
Collection and Wastewater	The city's drainage, wastewater collection and treatment system subproject,	The proposed plant will treat wastewater from the three wards, and discharge into the Phan



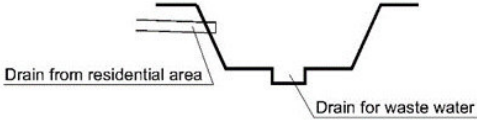
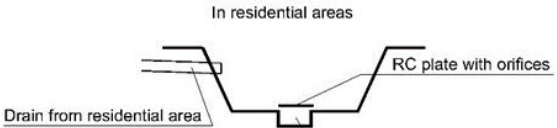
Subproject	Description	Recommended Sustainability and Green Elements
Treatment in West Vinh Yen	<p>includes three components which are included in the Program:</p> <ul style="list-style-type: none"> • Component 1: Wastewater collection in three wards—Dong Tam, Hoi Hop, and Tich Son—with nine pumping stations and one pressure pipe to the Wastewater Treatment Plant. • Component 2: Secondary and Tertiary collection sewers • Component 3: Wastewater treatment plant 	<p>River—1,500 m from the wastewater treatment plant. Treatment will be environmentally sustainable—a combined system including an aerated lagoon has been proposed and accepted. The subproject will improve water quality of Dam Vac Lake by intercepting wastewater for treatment downstream.</p>
	<p>This subproject should be included according to an improved design with a combined treatment system.</p>	
Tertiary Wastewater Sewers	<p>Involves the construction of the tertiary sewer network, some secondary pipes, and household connections in four wards—Dong Da, Ngo Quyen, Khai Quang, and Lien Bao. Proposed for funding under a JICA subproject, but was cancelled because of a lack of funds.</p>	<p>A crucial investment to improve lake and river quality. Dam Vac Lake is the main green hub of the city.</p>
	<p>This subproject should be included as designed</p>	
Green Park Development near Dam Vac Lake	<p>Involves the construction of a green area in Zone B—44.12 ha—located in the south, close to Dam Vac lake. It will be the first public park of the city.</p>	<p>The subproject is a green hub and requires a strong theme, including its wetland features—two wetlands are proposed in the park.</p>
	<p>This subproject should be included according to the improved design as presented by local consultant, and the recommendations of the urban designer's concept sketch.</p>	
Infrastructure for University Area	<p>This is an arterial road of the new University area proposed in north of the city. It will be 5.498km length, total width 50m, including storm ditches, sidewalks, median, and lighting. Investment will be into two phases: Phase 1 will construct one lane, width 25m and is included in the Program; Phase 2 will complete the second lane—cross section 50m but is not included in the Program.</p>	<p>This is a green element connecting two hubs—the lake and forest. The road should be designed with bioretention swales to drain storm water. It should include a greenway along its length.</p>
	<p>Phase 1 of the scheme should be included, as per the improved design</p>	
Exhibition/Linkage Center for Business Support	<p>An exhibition center for supporting industrial production with total area of 1.5 ha. It is proposed to be located in Huong Canh Town of Binh Xuyen District, and will showcase goods services available locally. It is also a business incubator for green technology industries.</p>	<p>The subproject is proposed to link industrial activities in the green city program, and should feature green infrastructure components.</p>
	<p>The design of this complex requires revision to include far more green features.</p>	

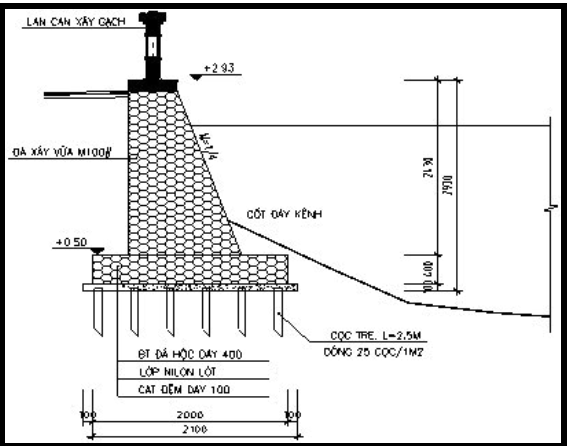
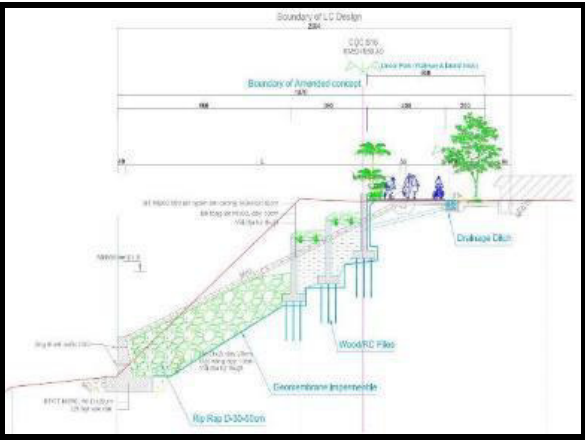
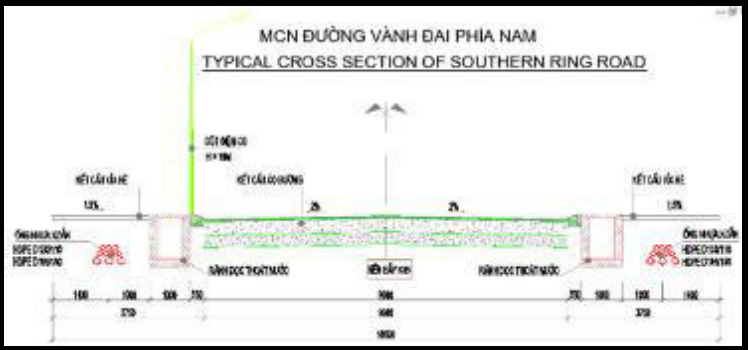
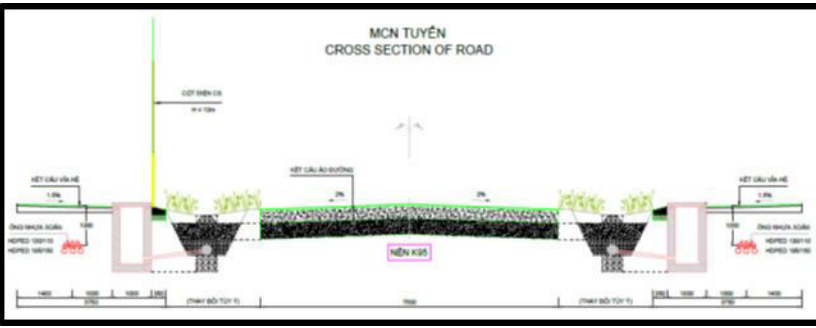
Source: PPTA Consultants

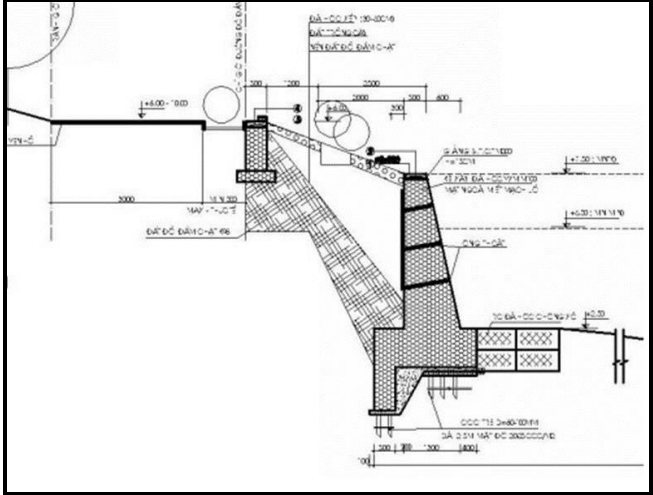
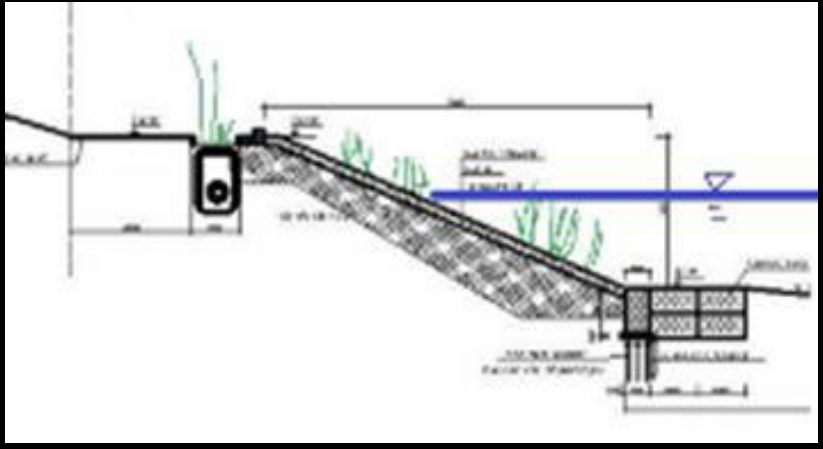
Recommended Design Improvements to Incorporate Green Infrastructure Features



As shown in **Tables 4-13, 4-14** and **4-15** the consultants have made a number of recommendations on improving specific designs to make them more in conformity with green infrastructure principles for each city. Selected recommended designs are shown as **Figure 4-11**.

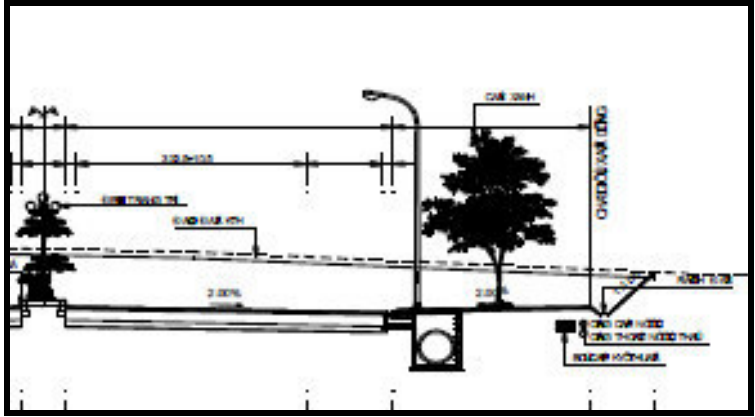
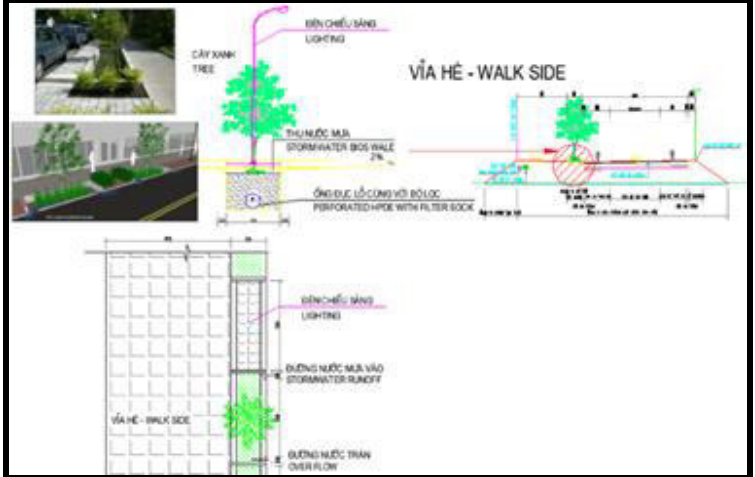
Figure 4-11. Sample designs towards green infrastructure features

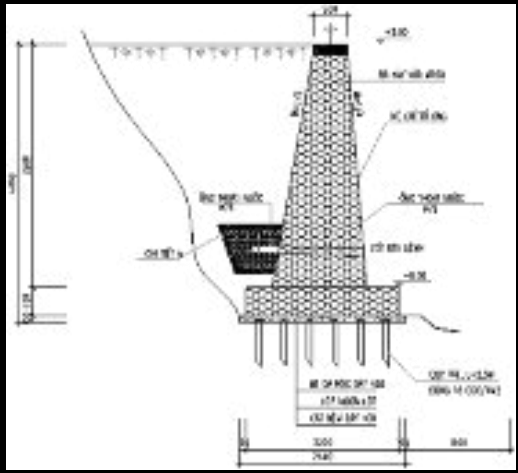
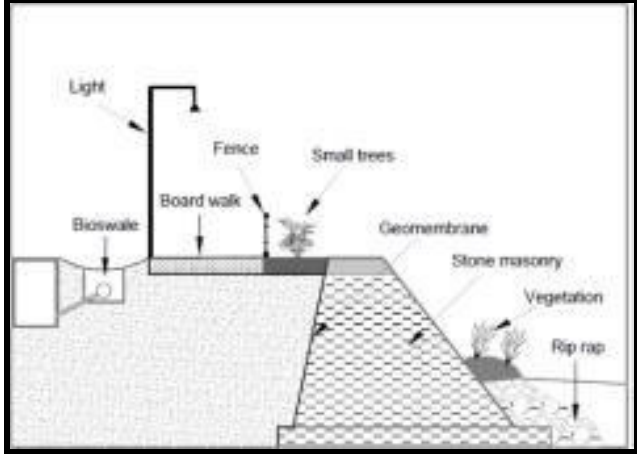
From Original Design or Situation	To Green Infrastructure Features
	
Ha Giang	
Drainage	
	<div style="text-align: center;"> <p>Out of residential areas</p>  </div> <div style="text-align: center;"> <p>In residential areas</p>  </div> <p>It will also include the green corridors along the ditches.</p>

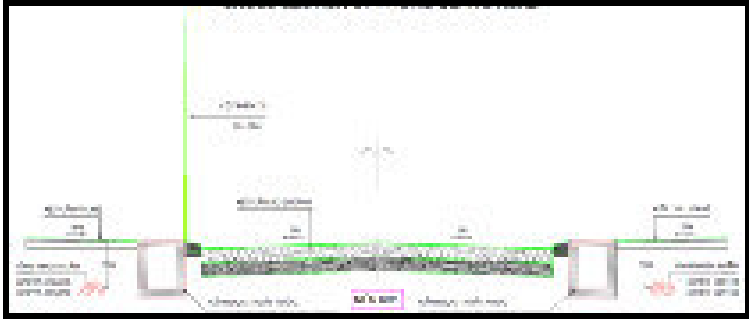
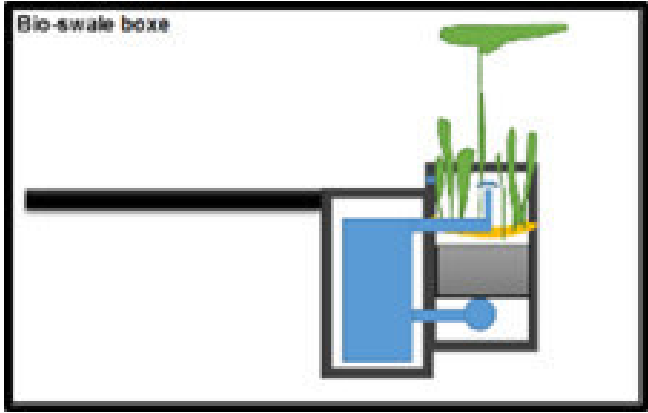
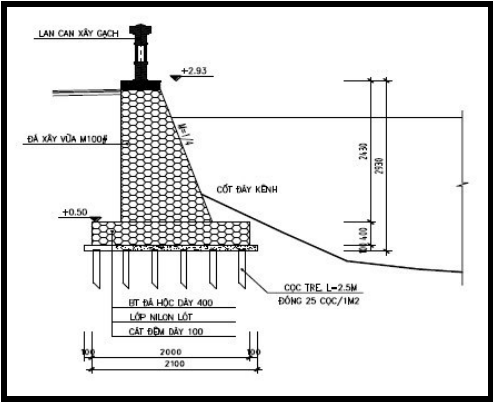
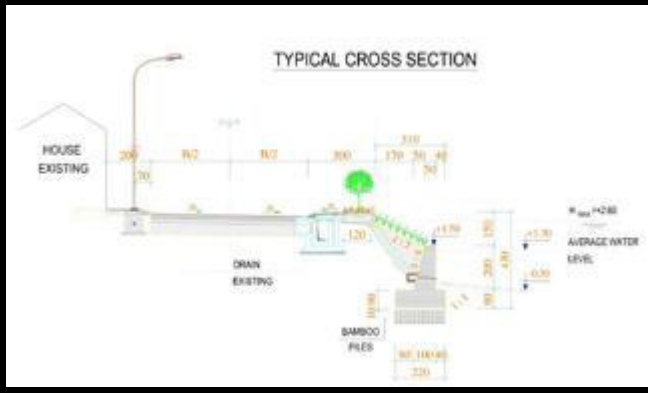
From Original Design or Situation	To Green Infrastructure Features
River Embankment	
	
Road	
	

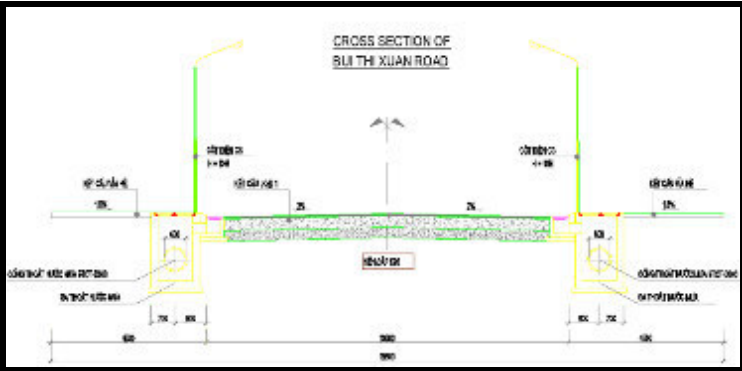
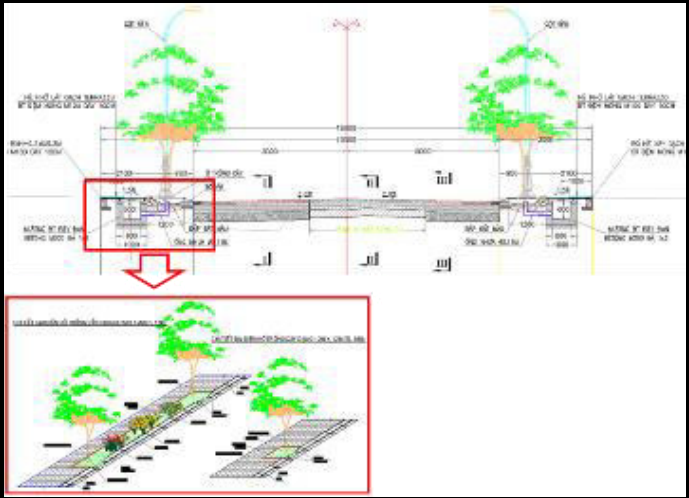
From Original Design or Situation	To Green Infrastructure Features
Vinh Yen	
Embankment	
 <p>This technical drawing shows a cross-section of a concrete embankment. It features a vertical concrete wall on the left, a sloped concrete structure in the middle, and a stepped concrete base on the right. Dimensions are provided in meters, including a top width of 2000m, a base width of 4000m, and a height of 4.00m. The drawing includes various hatching patterns to represent different materials and structural layers.</p>	 <p>This drawing illustrates a green infrastructure embankment. It shows a concrete structure similar to the original design but with a sloped face covered in vegetation. A water channel is shown on the right side, with a water level indicated by a blue line. The drawing includes dimensions for the embankment's width and height, and shows the integration of green infrastructure elements like plants and a water channel.</p>

From Original Design or Situation	To Green Infrastructure Features
Park	
 <p>This image shows a technical site plan or map of a park area. It features a prominent blue winding waterway that meanders through the site. To the right, there is a large green area outlined in black, representing a golf course. The map includes various lines, possibly representing roads or property boundaries, and some smaller inset diagrams in the top right corner.</p>	 <p>This image is an annotated version of the site plan from the left. It highlights various green infrastructure features with yellow callout boxes. Key features include: <ul style="list-style-type: none"> Water Features: 'Dean Vae Lake' and 'Horse Lake Golf Course' are labeled at the top. Green Spaces: 'Green Park' and 'Green Park' are labeled in the center and right. Walkways: 'Walkway' and 'Walkway' are labeled in the lower left and center. Other Features: 'Bicycle Path', 'Bicycle Path', 'Bicycle Path', and 'Bicycle Path' are labeled in the lower right. Structures: 'Structure' and 'Structure' are labeled in the center. </p>

From Original Design or Situation	To Green Infrastructure Features
Road	
	

From Original Design or Situation	To Green Infrastructure Features
Hue	
Embankment	
	

From Original Design or Situation	To Green Infrastructure Features
Road in Citadel	
	
Lake embankment in Citadel	
	

From Original Design or Situation	To Green Infrastructure Features
Rural Road	
 <p>CROSS SECTION OF BLI THI XUAN ROAD</p>	

4.3.3 Urban Design

This section assess the subprojects according to key urban design principles. This enabled the incorporation of such principles in the redesign of the subprojects where necessary.

Ha Giang Subprojects

Ten subprojects were assessed. **Table 4-16** presents the recommendations.

Table 4-16. Urban Design Recommendations for Ha Giang Subprojects

Subprojects	Urban Design Recommendations
Drainage for Tran Phu and Nguyen Trai Wards	Not relevant for UD
Upgrading of National Road No. 2	Pavements (3.75m wide) on either side of the road carriageway should include semi-mature tree planting at 7-8m intervals and tall lighting columns (9m high) for road traffic purposes. Lighting columns for traffic would probably be at spacing of 20m-25m whilst that for pavements would be at 7m-8m intervals, and possibly ground or low-level lighting. Directional signs should be affixed to lighting columns to avoid clutter. The existing city gateway entrance should be relocated to the southern most point of the upgraded road section.
Southern Ring Road (SRR) Improvement.	There should be a linear park/landscape pedestrian route along the eastern bank of the River Lo and into the southern edge of the city centre. This should be separate from the SRR and aligned alongside the riverbank. There could be a pavement (3.75m) on one side of the SRR—western riverbank side—that would be connected by steps to the riverbank linear park. This pavement area should have tree planting and lighting columns—for traffic and pedestrians—to the same standard as for National Road No.2. The riverside linear park needs to be designed as a natural route that would take advantage of the existing forested environment alongside this part of the eastern riverbank. The route should incorporate existing trees, with supplementary planting where necessary, lighting and seating, with occasional shelters, along a corridor width of 5-10m on the eastern River Lo bank. This could include level changes depending on flood limitations with the use of boardwalk sections close to the river. The emphasis would be on design for a natural environment.
Bridge from National Road No. 2 to Southern Ring Road	There should be 2.5m wide pavements on either side of the bridge with lighting for traffic and pedestrians. Pedestrian lighting could be set at a low level into the bridge wall. Pedestrian links/steps would be needed to the proposed linear park/pedestrian route along the east bank of the River Lo as part of the new SRR subproject.
Drainage for Minh Khai Ward.	Not relevant for UD
Western Embankment of the Lo River	There should be a landscape pedestrian route along the top of the embankment up to the Me Bridge with a connection onto the bridge crossing. The route should include a 3m wide pathway within a landscape corridor of up to 10m width, with tree and shrub planting, and set within an existing natural environment according to an informal design style. The pathway should preferably be of packed gravel with lighting and seating and occasional shelters.
Embankment and roads on both sides of Mien River	The Bridge 3/2 area is scenic and there is potential for extending trekking routes along River Nam Thau towards hills on the eastern edge of the city. There could, in the short to medium term, be a continuous riverside pedestrian route and linear park along the Lo, Mien and Nam Thau riverbanks from the city centre area to the eastern city edge. This landscape pedestrian route/linear park should incorporate existing trees, with some supplementary planting where necessary, and lighting and seating, with occasional shelters, along a corridor width of 5-10m. It would take up part of the embankment top as well as some natural landscape alongside. This pathway route could include level changes depending on flooding limitations together with boardwalk sections. The emphasis would be on a design for a natural, not urban environment, with appropriate materials.

Subprojects	Urban Design Recommendations
Southern Embankment of Me Stream	There should be a linear park/landscape pedestrian route along the top of the embankment that could incorporate some attractive existing tree growth in the northern section of the route. This landscape pedestrian route/linear park should integrate existing trees, some supplementary planting where necessary, lighting and seating, with occasional shelters, along a corridor width of 5-10m. It would take up part of the embankment top and some natural landscape alongside. This pathway route could include level changes depending on flood levels and incorporate boardwalk sections. The emphasis would be on design for a natural, not urban environment, with materials to suit.
Improvements to Existing Landfill	When completed/full the landfill should be covered with topsoil and planted with trees to blend in with the surrounding natural forested environment. Pathway routes should be provided through the landscaped landfill area to adjoining hillside forests, and from local communities, to turn this into a passive recreational area. Seating, directional signage and shelters should be included. A concept plan needs to be prepared for the landfill area with the local community. Pathway routes should be 2.0-2.5m width and in concrete or packed gravel. There would need to be ground lighting or medium height lighting standards—3.0 or 4m high, seating, shelters and directional signs.
Drainage for T1, T2, T3 and T4 of Quang Trung Ward.	Not relevant for UD

Source: PPTA Consultants

Vinh Yen

Eight subprojects have been assessed. **Table 4-17** presents the recommendations.

Table 4-17. Urban Design Recommendation for Vinh Yen Subprojects

Subprojects	Urban Design Recommendations
Dredging and Landscape Protection of Dam Vac Lake.	The lakeside edge pedestrian route should connect with the golf course, and proposed routes along the River Phan. It should include a pathway, cycling and jogging tracks within a linear park corridor of trees, bushes, small gardens and groves of trees. The landscape and spatial treatment would be in a natural and in an informal design style with the incorporation of existing trees and vegetation. The paths for jogging, cycling and walking should be differentiated by a change of materials, that could include packed gravel for walking, tarmac surface for cycling and softer synthetic surfaces for jogging connecting exercise stations along the route. Seating, shelters and pavilions should be provided, and low and medium height lighting. This would be accommodated within a linear park corridor width of at least 10-15m. This subproject should be closely integrated with that for Area B (see SP2).
Green Park Development near Dam Vac Lake	This is a large area for a park and should incorporate different themed areas. Much of the area, especially along the lakeside edge would be a wetlands environment that include a small lake. This could be one distinct element of the park to attract wading birds and wetlands flora and fauna. A network of boardwalks, with interpretative material and bird hides, could extend from the lakeside linear park into this area with connections to River Phan and proposed low-lying, manmade hills in the southern part of the area. These hills could be planted with trees and gardens with one for a picnic areas and the another as the beginning of the botanical garden focused on indigenous plants, which could, if successful expand into other areas. There should be a network of walking routes with cycling and jogging tracks alongside the River Phan connecting the lakeside linear park. A concept plan has been prepared (see <i>Figure 4.6.1 – Sketch Concept Plan for Dam Vac Lake Area B, in Appendix 3</i>) but would need to be worked up in more detail prior to the preparation of working drawings.
Infrastructure to University Area	The cross-sections for the retained road show minimal landscape provision. There is no detail of the land uses/facilities that would gain access or benefit from the road. There is little doubt that the subproject roads would open up speculative development land in the north of Vinh Phuc to the Hanoi-Lao Cai Expressway. However, the degree of environmental sustainability or 'green' credentials of this subproject have yet to be established. More information would be needed to properly assess it, especially in terms of staging and how it relates to the phasing of other Master Plan areas.

Subprojects	Urban Design Recommendations
Tertiary Wastewater Sewers	Not relevant for UD
Waste Water Collection and Treatment System	Not relevant for UD
Exhibition/Linkage Centre for Business Support	Not relevant for UD

Source: PPTA Consultants

Hue

Some 37 subprojects were assessed although many of which are drainage and streetscape improvement works for roads in the Citadel and have been grouped. Urban design recommendations are shown as **Table 4-18**.

Table 4-18. Urban Design Recommendation for Hue Subprojects

Subprojects	Urban Design Recommendations
Dredging and Embankment of Ke Van River.	The west side has a broad strip, about 10m wide along almost the entire length of the Ke Van River bank to the An Hoa River bridge. This should be used as a linear park with tree planting, seating, shaded canopies and lighting. On the other side, the embankment works should include a 3-5m wide basic riverside pathway, lighting, tree planting and at least two pedestrian bridge crossings to the west bank linear park. Available land on this eastern bank is limited and boardwalks extending out over the water may be needed for pedestrian access. There is significant existing tree growth that should be retained.
Drainage and Pavements of Four Inner City Wards of the Citadel	Urban design and streetscape improvements for roads in these four wards should be undertaken as part of an overall strategy and improvement plan that addresses landscape/streetscape, pedestrian access, street furniture, drainage/utility provision and traffic needs—including traffic calming measures and one-way streets. This should also include a comprehensive network of pedestrian and cycling routes throughout the Citadel area that would increase visitor attractiveness. The character of these streets should be retained, which would mean no road widening or property demolition. Road carriageway widths should be no more than 5.5m and, for some streets, could be 4m wide. Narrower streets could be part pedestrianised allowing vehicles for access only. Tree planting is broadly sufficient, although some supplementary planting may be needed for shade. Electricity and telephone line should be placed underground. A one-way system is in place for some streets, although this should be reviewed as part of a comprehensive approach to traffic management for the Citadel.
Dredging and Embankment Works for Six Citadel Lakes	Urban design and streetscape improvements for these lakes should be undertaken as part of an overall Citadel area strategy and improvement plan that addresses landscape/streetscape, pedestrian access, street furniture, drainage/utility provision and traffic needs, including traffic calming measures and one-way streets. This should also include the need to incorporate a comprehensive network of pedestrian and cycling routes that would increase visitor attractiveness. It is proposed to undertake engineering strengthening of the embankments with stone foundations, bamboo piling and stone and mortar facing. A fountain/aerator has been suggested to improve water conditions. There should be roadside pavement and lighting improvements along the lakes' edges. Trees should be retained along the lakeside edges and lighting provided.
Water Supply System for Landfill Area, Phu Son, Huong Thuy Town.	Not relevant for UD
Dredging and Embankment Works for Lap River, Kim Long Ward	This would open up an attractive secondary route along the river, which is currently overgrown and unusable. Mature and semi-mature trees on both banks should be retained. The narrow road along its southern embankment should be retained in its current form, although it could be made into a one-way street if traffic increases. The south bank should be the focus for a tree-lined riverside route, perhaps 3-4m wide,

Subprojects	Urban Design Recommendations
	with some supplementary planting, seating, shelters, lighting and perhaps some limited parking spaces. The emphasis should be on natural and informal landscape incorporating existing trees. This could be replicated on the north side of the river depending on available land. One or two pedestrian bridge crossings should be provided to connect both banks.
Eco-channel of An Van Duong Development Area.	This is one of many schemes in the An Van Duong area with broad landscaped avenues and boulevards. There are linear parks throughout the development area of 60m or more in width along canals or major roads. The key issue is the danger of a surfeit of linear parks. There seems to be little consideration as to how these areas of parkland would be used, who would use them and what linkage function they would play or indeed if they would be used at all. The broad eco-channel (33.5m) would also connect two narrow river tributaries at either end and this raises the issue of the sheer scale of the water route itself. The need for land acquisition along the eastern side must be questioned given that there is plenty of available land along the western side without existing properties. There is also the issue of the maintenance and management of the extensive landscape for these linear parks.
Dredging and Embankment for An Hoa River.	A linear park along the outer bank of the Ke Van River has been proposed as part of the urban design recommendations up to the An Hoa River bridge. This theme should be continued along the An Hoa River where available land allows. In the case of An Hoa there appears to be limited land available with the riverside forming the back of private properties. There is substantial mature tree growth. Where there is insufficient land, a 3-5m width boardwalk extending out over the river could be provided along either bank. Land acquisition should be avoided for the purpose of creating a boardwalk/footpath route. Mature and semi-mature trees should be retained and will most likely provide a screen alongside private houses. The pathway/boardwalk needs to include shaded seating areas and lighting. A cycle route should also be considered.
Improvements of Citadel Canal/Moat.	Existing tree planting and grass banks along either side of the moat edge would be retained. The embankment walls on both sides should be strengthened since they are in poor condition along much of the moat length. Grass embankments on the inner part of the moat, close to the Citadel walls, will be kept as they are, including existing lighting. There are sufficient opportunities, within and around the Citadel for walks and landscape improvements. Also, there is scope on the outer bank of the canal/moat to incorporate walkways set amongst trees between the canal and adjoining roads. This could be done as part of level change design following that near the main southern Citadel entrance.
Park, Paths, Drainage and Lighting in An Van Duong Development Area.	The layout and roads for the An Van Duong area has been based on the work undertaken in 2005 and needs to be reviewed by assessing traffic generation forecasts/modelling and property market demands. Highway standards appear unjustified in terms of capacity and traffic generation needs. The proposed road extension appears to be speculative and it is questionable as to why this infrastructure would be required now and well before the earlier phases of An Van Duong are even near to completion. Some 65m width of the 75m-wide median strip would be landscaped as a linear park. For the successful use of an urban linear park there would need to be a number of attractions throughout its length, and especially at either end of it. It should have retail, leisure and recreational attractions along it, including some indoor facilities. The function and implementation of this subproject should follow that for a similar grand route from the Xuan Phu, and new administrative centre, roundabout to Ba Trieu Road, which is the most likely proposition for a 'festival' linear park complete with shopping, entertainment and leisure attractions, as well as the possibility for a central busway or LRT route.
Park and Square in Administrative Part Area, An Van Duong.	<p>The proposed landscape appears to provide a setting for the administrative centre with much of it apparently for trees to provide shading for significant areas of surface car parking. The circus core would be central park, probably for public access, together with a large pool and water fountain feature. Whilst many trees are proposed, how many would be part of a public park. The layout design appears to be more of an administrative centre with a landscape setting, rather than any new park of any significance.</p> <p>The notion that all government buildings be relocated to this site is questionable for urban sustainability reasons. This scheme could help to undermine the viability of central Hue, to erode the notion of high-density multi-functional mixed uses and also to encourage urban sprawl. The scheme as presented appears to be grandiose and land-hungry. However, if the plan is to proceed, it is recommended that car parking</p>

Subprojects	Urban Design Recommendations
	should be placed underground beneath administrative building structures, and that densities be increased with the remainder of the site utilised for a mix of medium to high density retail and residential uses set within informal parkland that would extend through the site.
Embankment and Roads for the Dong Ba River	Lighting should be included along the riverside walkways. The northern section of landscaped pathway narrows principally because of land restrictions and the need to negotiate around existing housing areas. There should be a pedestrian 20 m wide bridge crossing of the Dong Ba between the two existing road bridges. There is a substantial amount of electricity wiring and this should be placed alongside the bridge structure as part of the subproject. Mature and semi-mature trees should be retained. To the north of the Phu Hau road bridge where the Dong Ba River meets the Huong River is some vacant land on both sides. There is scope here for creating a small neighbourhood park—on both sides—at this scenic confluence location, perhaps with a connecting pedestrian bridge.
Embankment and Roads for the An Cuu River	There would be a 3m wide road with 2m wide pavements one either side together with tree planting and lighting. At certain riverside points there should be small park areas as part of an overall riverside route that would include seating and canopies/shelters. Lighting and supplementary tree planting would be needed along the riverside embankment.
Embankment and Roads for the Nhu Y River	Along some parts of Han Mac Tu Road up to An Van Duong, especially at the eastern end there are opportunities for creating broader riverside landscape areas to include small parks for which tree planting, shaded seating areas and lighting would be needed.
Section of Central Road in An Van Duong Development Areas, including Bridge	The layout and roads provision for the An Van Duong area has been based on the work undertaken in 2005 and needs to be updated through traffic generation forecasts and modelling. The proposed road extension appears to be speculative.
Bui Thi Xuan Road.	The road widening may be needed for its eastern half to serve existing residential properties and allow traffic to pass comfortably. This could be accomplished with a 7.5m carriageway. A 3m-wide pavement could be provided on one side only, and include a dedicated cycling lane. Significant tree planting already exists along the length of the road but lighting would be needed. The widening of the road at the western end is debatable, since the land is almost entirely in agricultural use. This part of the Thuy Bieu peninsular area should be conserved for its recreational and landscape value and to maintain a riverside setting for the Nguyen Imperial tombs further south.
Huyen Tran Cong Chua Road.	The proposed road standards are questioned in terms of traffic needs. Road widths could be reduced to 7m with a pavement on one side only and provision for a dedicated cycling lane. This would be important to reduce property acquisition needs. Significant tree planting already exists along the length of the road but lighting would be needed.
Vy Da Bridge and Access Roads.	The existing road is wide—10.5m-12m—along its length. The traffic justification for widening to the standards proposed needs to be supported by traffic projections, and assessed against the costs of land acquisition. It is understood that there may be some congestion pinch-points for this road section where double parking sometimes occurs. Indented parking bays could be incorporated into pavement widths and road carriageways reduced. There should be some tree planting with semi-mature trees along the pavements, between parking bays that would complement the proposed tree and shrub planting along the median strip. Lighting columns for pedestrians and traffic would be needed. The need for dedicated bicycle lanes alongside the carriageway should be assessed. The open space at the Nguyen Phan Chanh junction has recently been provided with semi-mature tree planting, pavements, lighting and central grass lawn. Given this, the proposed redesign should probably be avoided. Thus, existing planting should be allowed to grow to maturity and consideration given to supplementary landscape needs thereafter.

Source: PPTA Consultants

4.4 Social Safeguards Assessment

Social safeguard assessments for the proposed subprojects are related to: (i) the need for land acquisition and compensation required for some subprojects; and (ii) the need to ensure an appropriate and inclusive approach with local communities, including Indigenous People (IP).

Resettlement is inclusive when there is equitable access, for all relocated population, including the poorest and the vulnerable, to urban infrastructure, land, housing, social services and livelihood opportunities. Inclusive resettlement is in particular, built through a participatory planning and decision-making process shared between various levels of government, relocated communities and civil society. But resettlement is not only about rebuilding houses for all those affected, but also about reviving livelihoods and rebuilding the community and the environment. Inclusive resettlement has to be sustainable, resilient and affordable.

- **Sustainable.** Resettlement will be sustainable if it maintains the community structure, preserves social networks and allows relocated households (HH) to continue their livelihood or to create opportunities for a new livelihood. Sustainability is also built through a pro-active community, government and civil society that maximize the potential of the community/city's available resources for its development. Assessing the needs and vulnerabilities of affected populations with particular attention to livelihood is essential during resettlement planning.
- **Resilient.** Resilience could be in specific cases an alternative to resettlement. The question to relocate or not to relocate should be asked in the case of people living in disaster prone areas. These people are often the most vulnerable and have site specific livelihoods. Relocation may impoverish them. Building safe and resistant houses and infrastructure, and training the population on how to build resiliency against future disasters may be a more sustainable option.
- **Affordable.** Land, housing and urban services should be affordable to all relocated households. Adequate compensation and assistance, and an appropriate financial mechanism should be proposed to allow the poor and vulnerable to have access to land, housing and services.

Subproject screening was based on (i) a review of existing studies regarding land acquisition; (ii) visits to each of the subprojects; (iii) discussions with relevant agencies; and (iv) focus group discussions conducted for some of the subprojects. **Appendix 7** includes a summary of focus group discussions and details the subprojects' impacts regarding land acquisition and resettlement. Feasibility studies have been prepared by national consultants in all three cities. Each PMU also hired a consultant to conduct preliminary surveys on land acquisition and resettlement for each of the subprojects. The data prepared on the extent and costs of land acquisition and resettlement are preliminary, and not based on detailed survey or inventory of losses. In addition to the identification of land acquisition and resettlement impacts, social risks were assessed for each subproject, and mitigation measures to ensure sustainability, resilience and affordability are proposed. Measures to involve citizens' participation in the implementation and the monitoring of some subprojects have also been proposed.

4.4.1 Subprojects in Ha Giang City

Ten subprojects are proposed in Ha Giang City, which have impacts on land acquisition and resettlement. It is estimated that 529 HH will be affected, most of them marginally; 27 HH will have to be relocated. In Ha Giang City there are indigenous people (IP) communities. However, these IP groups are urbanized and integrated into the urban mainstream way of life. Furthermore, IP communities will not be specifically targeted through the proposed subprojects, and no differential impacts are expected.

Consultation in the form of focus groups discussions (FGD) was conducted for proposed subprojects with the most significant land acquisition impacts—Southern Ring Road and upgrading of the road from Quyet Thang to Son Ha⁶⁴. This was to identify concerns of affected households (AH) to better prepare resettlement/compensation plans. The main findings were:

- **Information/approach.** People are generally aware of the proposed subprojects in their wards. HH want to know where the subproject will be implemented and the exact design—who is affected, and

⁶⁴ This project was included in the first list proposed by Ha Gang City but was later removed from this list

to what extent, etc. In all FGDs it was confirmed that there is no need for a specific approach with IP group since they are fully integrated and all speak Vietnamese. IP communities want to be treated as the Kinh group.

- *Compensation.* HH are aware of new rates issued by PPC; they are also aware of the existing land transactions in their areas. HH consider that PPC rates are lower than market ones. They expect the Program to provide fair compensation, satisfying market rates. For the Southern Ring Road, some HH have already been partially compensated and experienced some land use restrictions—cannot cultivate some areas. HH request a clarification of the situation and an assessment of the impacts they have already experienced.
- *Income restoration.* Especially for the Southern Ring Road, HH are concerned by the potential loss of income and request restoration measures for loss of productive land and fish ponds. These need to be discussed with the AH.
- *Relocation.* HH are not aware of the location of relocation sites. They want to be relocated as close as possible to their former home or be allowed to make their own arrangements.
- *Vulnerable HH.* No potential vulnerable HH were identified in both subprojects.

Table 4-19, outlines the social benefits, impacts on land acquisition and resettlement, and the proposed measures to be adopted.

Table 4-19. Social Benefits, Impacts on Land Acquisition and Resettlement and Proposed Measures for Subprojects in Ha Giang City

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
Drainage for Tran Phu and Nguyen Trai Wards	<ul style="list-style-type: none"> - Reduction of flooding and improved drainage and sanitation conditions for potentially: 6,700 HH for Tran Phu and Nguyen Trai wards; 3,500 HH for Minh Khai ward and 1,400 HH for Quang Trung ward. - Equity of access to services strengthened. 	<ul style="list-style-type: none"> - Limited impacts on land acquisition—1,546m² - 817m² agriculture, 729 m² residential - Estimated 155 HH marginally affected—land, houses, secondary structures, etc.; - 233 m² of main structure affected (92 HH); - Land acquisition costs: US\$ 62,474 	<ul style="list-style-type: none"> - No specific risks anticipated 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets and an assistance package. - Involve citizens in maintaining the cleanliness of the drainage system through community programs. - Development of awareness program to prevent dumping of solid wastes into the ditches and drainage system. - A Water and Sanitation Committee (WSC) should be established to ensure community participation and responsive management of the subproject. As indicated in the GCAP, a community scorecard to monitor activities in the four urban wards should be implemented by the WSC to ensure citizens' monitoring
Drainage for Minh Khai Ward	<ul style="list-style-type: none"> - Strengthening natural hazard resilience against floods; citizens will be better able to cope with flooding. 	<ul style="list-style-type: none"> - Very limited impacts on land acquisition (280 m²); 21 HH marginally affected. - 9 HH have main structure affected (178 m²). - Land acquisition costs: US\$ 37,023. 		
Drainage of T1, T2, T3 and T4 for Quang Trung Ward		<ul style="list-style-type: none"> - Very limited impacts on land acquisition (281 m²). - 8 HH marginally affected; no main structure affected. - Land acquisition costs: US\$ 12,261. 		
Western Embankment of Lo River	<ul style="list-style-type: none"> - Facilitate the evacuation of people in the event of a natural disaster. - Strengthening natural hazard resilience against floods; citizens will be better able to cope with flooding. - Proposed green belt along the embankment—Lo River, Mien River expansion of scenic trekking routes along the river, with permanent pedestrian path—Mien River—linear 	<ul style="list-style-type: none"> - No impact on land acquisition—public forest land. - Land may be allocated to HH for forestry production—plantation of acacia. - No land acquisition costs: compensation for trees to be assessed. 	<ul style="list-style-type: none"> - Risks related to loss of timber trees which may lead to impoverishment. 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets. - For trees on public land, compensation for trees at market rates to owners of trees regardless of tenure status. - Income restoration measures to be discussed with owners of trees—i.e. allocation of other forest areas—to be discussed. - Income restoration measures to be
Embankment and roads on both sides of		Embankment of Mien River	<ul style="list-style-type: none"> - Risks related to relocation and loss 	

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
Mien River	park/landscape pedestrian route along the top of the embankment with supplementary planting, lighting and seating, with occasional shelters (Me stream) will ensure public access to the rivers/stream banks for the neighbouring communities and all Ha Giang citizens, and will contribute to make the City more inclusive.	<ul style="list-style-type: none"> - Limited impacts on land acquisition—1,211 m² of agriculture land 54 HH marginally affected. - Land acquisition costs: US\$ 19,717. <p>Phung Hung Road</p> <ul style="list-style-type: none"> - Significant impacts on land acquisition, 11,537 m² of agriculture land and 7,919 m² of residential land affected; - 2,136 m² (71 HH) of main structure affected; 15 HH to be relocated - Land acquisition costs: US\$ 568,660 	of productive land which may lead to impoverishment.	<p>discussed with severely affected HH through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers.</p> <ul style="list-style-type: none"> - Development of awareness program to prevent dumping of solid waste into the Lo and Mien rivers and Me Stream, should also be considered. This will contribute to enhanced citizen participation for environmental protection. - As proposed in the design for Me stream, levees should be included to protect houses and properties without a full embankment from flooding (around 20 HH); it will make local residents better able to cope with flooding.
Southern Embankment of Me Stream		<ul style="list-style-type: none"> - Limited impacts on land acquisition—1,938 m²: 1,418 m² agriculture, 520 m² of residential affected along small stream - 39 HH marginally affected; 3 HH severely affected—losing more than 10% of their productive land; No main structure affected. - Land acquisition costs: US\$ 31,099. 	- Risks related to loss of productive land which may lead to impoverishment	<ul style="list-style-type: none"> - Proposed green belts, linear parks, pedestrian paths to be included in the final design to make the city more inclusive. - Relocation option to be proposed to the 15 HH affected by Phung Hung road so that they are relocated in a serviced resettlement site.
Improvement of Existing Landfill	- Contribute to a better environment and will improve community health. It will serve the total Ha Giang City population.	<ul style="list-style-type: none"> - No land acquisition (25.5 ha of public land); however land may be allocated to 12 HH for forestry production—plantation of acacia. - 2 HH (120 m²) not affected by land acquisition but need to be removed due to environmental conditions—close to current and future landfill. - Two informal waste pickers present at the current landfill site. 	<ul style="list-style-type: none"> - Risks related to relocation and loss of timber trees which may lead to impoverishment - Risks for vulnerable population—informal waste pickers. 	<ul style="list-style-type: none"> - Compensation at replacement cost for loss of land and non-land assets and assistance package. - For trees on public land, compensation for trees at market rates to owners of trees regardless of tenure status. - Income restoration measures to be discussed with owners of trees—allocation of other forest areas—to be discussed. - Income restoration measures for informal

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
		<ul style="list-style-type: none"> - Land acquisition costs: US\$ 7,822. 		<ul style="list-style-type: none"> waste pickers—to be hired in waste separation at new landfill site etc.—to be discussed. - Public information campaign to encourage waste separation at source and to increase awareness for related practices should be considered. This will enhance citizens knowledge and participation in environmental protection.
Upgrading and expansion of National Road No.2	<ul style="list-style-type: none"> - Improved mobility of people, goods and services will benefit to the whole population. - Proposed pedestrian and cycling paths will improve accessibility and safety for pedestrians, cyclists and for residents along the road. This will contribute to make the city more inclusive for all road users. 	<ul style="list-style-type: none"> - Limited impacts on land acquisition—35 HH lose 1,400 m² of residential land and 1,200 m² of houses; 4 HH to be relocated. - Secondary structures affected—fences; no main houses affected. - Land acquisition costs: US\$ 234,701 	<ul style="list-style-type: none"> - Risks related to safety and relocation; - Presence of vulnerable groups including IP to be assessed 	<ul style="list-style-type: none"> - Compensation at replacement cost for loss of land and non-land assets, and an assistance package. - Proposed pedestrian and cycling paths to be included in the final design to make the city more inclusive and to ensure users safety. - Relocation option to be proposed to the 4 HH in a serviced RS.
Southern Ring Road Improvement	<ul style="list-style-type: none"> - Improved mobility of people, goods and services will benefit to the whole population - Proposed linear park along the Lo River, which includes pedestrian and cycling paths, will improve accessibility and safety for pedestrians and cyclists. This will contribute to make the city more inclusive for all road users. - The proposed design for the bridge should include a pedestrian lane and a bicycle lane to link both banks both linear parks and green belts. It will improve accessibility and safety for pedestrians and cyclists, and will contribute to make the city more inclusive for all road users. 	<ul style="list-style-type: none"> - Significant impact on land acquisition—46,250 m²: 44,553 m² agriculture, 1,697 m² residential; public forestry land also affected; - Some land acquisition already has taken place and some HH experience limitation of land use—couldn't cultivate or build houses. - Estimated 99 HH affected, 60 HH severely affected—losing more than 10% of their productive land; 8 HH to be relocated; relocation close to affected area needed. - Full design of interchange between bridge and NH2 not available. - Land acquisition costs: US\$ 674,236. 	<ul style="list-style-type: none"> - Need for income restoration, for severely affected farmers, to be assessed to avoid impoverishment. - Presence of HH already affected may be suffering from land use restrictions; - Risks related to relocation and loss of productive land which may lead to impoverishment; 	<ul style="list-style-type: none"> - Conduct due diligence for HH whose land was already acquired. - Compensation at replacement cost for loss of land and non-land assets, and assistance package. - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers. - Assistance to famers during the - Relocation option to be proposed to the 8 HH—self-relocation or relocation in a serviced RS close to their existing location.

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
Bridge from National Road No. 2 to Southern Ring Road		<ul style="list-style-type: none"> - No impact on land acquisition: public land on right bank and part of affected land already acquired on the left bank. - No land acquisition costs. 	<ul style="list-style-type: none"> - Presence of vulnerable groups including IP to be assessed; number of vulnerable HH and IP communities to be assessed. 	

Source: PPTA Consultants

4.4.2 Subprojects in Vinh Yen City

Six subprojects are proposed in Vinh Yen City, and will have impacts on land acquisition and resettlement. It is estimated that 714 HH will be affected, most of them marginally; 15 HH will have to be relocated.

Focus groups discussions were conducted for the two subprojects with the most resettlement impacts—sewerage and waste water treatment system, and the access road to University City. The main results are.

- *Information.* People are aware of the subprojects, since they were presented as part of the master plan in 2011. Preliminary surveys were also conducted for the access roads to the university. Waste water is identified as a major environmental and health problem. Ponds in Hoi Hop ward are contaminated with wastewater. People, however, requested detailed information on land acquisition as soon as possible.
- *Anticipated impacts.* HH living in villages along the access roads in the university area anticipate limited impacts on land acquisition based on preliminary surveys conducted. Farmers in the university area have on average 1, 4 sao—around 500 m²—of agriculture land in plots at different locations and are used mainly for rice cultivation. Even if some plots are affected by the university subproject many will retain other productive land. For the WWTP, plots are larger, and will be totally affected by its development. The main source of income is from agriculture in both areas.
- *Compensation.* Compensation at market rates has been given in both areas; sales have occurred and HH are aware of market rates. HH expect compensation will be at market rates.
- *Income restoration.* Only rice fields and fish ponds are affected in the proposed WWTP area. Children are not willing to continue agriculture production. HH are not interested by training since it is identified as inefficient. HH prefer additional cash. The younger generation are also not interested in cultivating the land in the university area. Therefore, income restoration programs should be focused on non-farm activities. HH in the university area are interested to diversify their incomes through providing services to students or to the university—catering, rooms for rent etc.

Table 4-20, outlines the social benefits, impacts on land acquisition and resettlement and the proposed measures to be adopted.

Table 4-20. Social Benefits, Impacts on Land Acquisition and Resettlement and Proposed Measures for Subprojects in Vinh Yen City

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
Dredging and Landscape Protection of Dam Vac Lake	<ul style="list-style-type: none"> - The proposed subproject will build an embankment and path around the lake. Dam Vac Lake banks are becoming more privately owned, and the investment will ensure that public access is maintained for all citizens. It will make the city more inclusive and will contribute to equity. 	<ul style="list-style-type: none"> - Significant impacts on land acquisition 22,000 m2 of agriculture land—30 HH—and 1,000 m2 of residential land—25 HH—affected; - No main structure affected and no HH will have to relocate. - Land acquisition costs US\$202,000. 	<ul style="list-style-type: none"> - Need to keep public access to Dam Vac Lake for citizens to ensure equity and inclusiveness for all. Risks related to loss of productive land which may lead to impoverishment 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets and an assistance package. - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers - Maintain public access to the Dam Vac Lake. - Dam Vac Lake Protection Committee will be created to ensure community participation and a responsive management of the subproject. As indicated in the GCAP, a community scorecard to monitor activities of the Dam Vac Lake should be implemented by the Protection Committee to ensure citizens monitoring. - Measures to promote access for disabled persons should also be developed to enhance inclusiveness.
Green Park Development near Van Dam Lake	<ul style="list-style-type: none"> - The proposed green area will become the first public park of the city. It will benefit all Vinh Yen citizens who will have access to new green areas. A playground will be developed in the park for children to use. The park may become a community gathering place which will help make the city more inclusive. 	<ul style="list-style-type: none"> - Significant impacts on land acquisition—440,000 m2 of land including 160,000 m2 of public land, 100,000 m2 of wetland and the remaining is mainly fallow land not cultivated (125 HH); paddy and fish production are however present; 1,000 m2 of residential land (15 HH) will also be affected; - No main structure affected and no HH will have to relocate; - Land acquisition costs: US\$ 1,615,000. - Positive impacts to citizens and 	<ul style="list-style-type: none"> Risks related to relocation and loss of productive land which may lead to impoverishment 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets and an assistance package; - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers - Measures to promote access for disabled persons should be included to enhance inclusiveness.

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
		neighbourhood community.		
Infrastructure to University Area	<ul style="list-style-type: none"> - The planned University City will improve education level of the population of Vinh Yen, and make the population more qualified for service jobs. - Existing villages will be served by new infrastructures—water supply, roads, and bus lines—which will increase access to services for this area; this will improve overall access to public services and mobility and will contribute to equity. 	<ul style="list-style-type: none"> - Significant impacts on land acquisition, 15.9 ha of agriculture land—280 HH—and 0.6 ha of residential land—38 HH—will need to be acquired; 15 HH will need to be relocated; - Estimated 400 HH affected. - Several villages included in the whole university project. Information on the scope of land acquisition and impacts on villages were not fully available; - Land acquisition costs: US\$ 1,680,000. 	<ul style="list-style-type: none"> - Need confirmation that villages will not be affected and will be integrated in the whole subproject design. Risks related to relocation and loss of productive land which may lead to impoverishment 	<ul style="list-style-type: none"> - Villages within the whole university area should be protected as far as possible and integrated in the university design. - Compensation at replacement cost for the loss of land and non-land assets and an assistance package. - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers; - Alternative livelihoods for villagers losing agriculture land should be developed—services delivered by villagers to university/students such as catering, entertainment, accommodation etc.; - Assistance to famers during the transition period - Relocation option to be proposed to the relocated HH—self-relocation or relocation in a serviced RS close to their existing location;
Tertiary Wastewater Sewers	<ul style="list-style-type: none"> - The proposed investment will improve sanitary conditions for 30,876 inhabitants and will improve access to services for a large part of the citizens leading to better equity regarding public services. - A related sanitation credit program is a key financial enabler, for this subproject, to ensure equity for poor and low-income households. 	<ul style="list-style-type: none"> - Limited impacts on land acquisition as most of the land affected is public land; 5,200 m² of garden land will be affected; 120 HH marginally affected—secondary structures, fences, trees, etc. - Land acquisition costs: US\$ 71,400 	<ul style="list-style-type: none"> - No specific risks anticipated 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets; - Involve citizens in maintaining the cleanliness of the drainage system through community programs; - Development of awareness program to prevent dumping of solid wastes into the ditches and drainage system;
Wastewater Collection and Treatment in West Vinh Yen	<ul style="list-style-type: none"> - The subproject will benefit to 10,000 households and covers the three remaining wards—Tich Son, Dong Tam, Hoi Hop—not included in the 	<ul style="list-style-type: none"> - Moderate impacts on land acquisition; 6 ha (1 HH) of agriculture land affected for the WWTP; 1,800 m² (9HH) for the 7 		<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets. - Income restoration measures to be discussed with HH severely affected

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
	JICA project; this will ensure the same access to sanitation for all citizens of Vinh Yen City.	<p>pumping stations and 6,000 m² for the pipeline network (9 HH). All 19 HH affected cultivate public land.</p> <ul style="list-style-type: none"> - Part of the 6 ha of land are public land allocated to farmers; - Land acquisition costs: US\$71,400 		<p>through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers.</p> <ul style="list-style-type: none"> - Assistance to famers during the transition period. - Development of awareness program to prevent dumping of solid waste into the ditches and drainage system.
Exhibition/Linkage Center for Business Support	<ul style="list-style-type: none"> - The subproject will contribute to the development of new local enterprises and industries which will generate additional local employment resulting in increases in household incomes. 	<ul style="list-style-type: none"> - Moderate impacts on land acquisition, 2.1 ha of agriculture land affected—105 HH—along NH 2A; area under urbanization. - Land acquisition costs: US\$71,600. 	<ul style="list-style-type: none"> - Risks related to loss of productive land which may lead to impoverishment 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers. - Assistance to famers during the transition period.

Source: PPTA Consultants

4.4.3 Subprojects in Hue City

Seventeen subprojects are proposed in Hue City which will have significant impacts on land acquisition and resettlement. Some of these—roads and channels—will require considerable land acquisition and the relocation of many HH with significant resettlement costs. It is estimated that 1,049 HH will be affected and 204 HH will have to be relocated. Measures to reduce land acquisition and resettlement need to be implemented.

Table 4-21, outlines the social benefits, impacts on land acquisition and resettlement and the proposed measures to be adopted.

Table 4-21. Social Benefits, Impacts on Land Acquisition and Resettlement and Proposed Measures for Subprojects Hue City

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
Dredging and Embankment of Ke Van River	<ul style="list-style-type: none"> - The subproject by improving flow to the Huong River and also its environment quality will improve living conditions of the people living along the river—around 500 HH. - Proposed linear park along the west side of the River and pathway on the East site will benefit to the neighbouring community. - Structuring the embankment of east side of the river to reduce erosion from storm water will benefit HHs located along the banks. 	<ul style="list-style-type: none"> - Limited land acquisition along the River due to clearance that already took place in some sections in 2011; large number of houses affected—80—but partially affected—trees, fences and small structures; no HH will have to relocate. - Tenure status of some houses on the each side of the River to be checked—possible encroachment on public land. - Costs of land acquisition around US\$ 346,000 	<ul style="list-style-type: none"> - Risks related to impacts on potential vulnerable HH—illegal encroachers, landless. 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Provide compensation for non-land assets in case of illegal encroachment. - Development of awareness program to prevent dumping of solid wastes into the canals should also be considered. This will contribute to enhance citizen participation for environmental protection. - Due diligence on land acquisition conducted in 2011 may be necessary;
Drainage and Pavements in Four Inner City Wards of the Citadel	<ul style="list-style-type: none"> - Proposed subproject will reduce flooding in these two wards and will improve drainage and sanitation conditions for potentially 12,800 HH. Equity of access to services will be strengthen. - Roads should not be totally cleared to avoid impacts on the community encroachment of structures and keep the heritage Citadel character—trees, and architecture. 	<ul style="list-style-type: none"> - The subproject proposes to clear the existing RoW; a significant number of HH encroached on public land—fence, part of house. - Due to the density of population within the Citadel, this will have significant impacts on structures; it is estimated that 100 HH will be affected through loss of structures; no HH will have to relocate. - Residential land acquisition—9,267 m²—will also be necessary. - Along some streets, vendors located around existing markets will be temporarily displaced. Measures to minimize impacts to be discussed with vendors an community. - Costs of land acquisition around 	<ul style="list-style-type: none"> - Encroachers may not be fully compensated for their structures even if they built them a long time ago. - Risks on the loss of income for street vendors. 	<ul style="list-style-type: none"> - Review design to reduce clearance of structures; clearance of structures should be done only when necessary for the purpose of drainage and not systematically to clear the RoW so as to keep the character of these small roads with high potential for eco-tourism. - Ensure compensation at replacement costs for land and structures in case of land acquisition. - Provide compensation for non-land assets in case of illegal encroachment. - Conduct meaningful consultation with residents due to the severe impacts on existing HH. - Assess impacts on local vendors during construction. A Sanitation, Drainage and Protection Committee (SDPC) should be created to ensure community participation and a responsive management of the subproject. As indicated in the GCAP a community

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
		US\$ 1.14 Million.		scorecard to monitor activities in the 4 wards should be implemented to ensure citizens monitoring
Dredging and Embankment for Six Lakes in the Citadel	<ul style="list-style-type: none"> - Prevention of water pollution through proper drainage will lead to a cleaner environment, which in turn contributes to improved health of people—densely populated areas around the lakes. - Embankments will contribute to protection of properties—reduction of erosion; landscaping will benefit the neighbouring community and increase tourism attraction of the Citadel. 	<ul style="list-style-type: none"> - The subproject will have limited impacts on land acquisition and resettlement—10 HH expected to be affected through loss of secondary structures; some illegal encroachment may have occurred. - HH will be affected through loss of income—cultivation of vegetables on the lakes. - Costs of land acquisition, US\$ 92,464. 	<ul style="list-style-type: none"> - Risks related to loss of source of income—cultivation of vegetables on the lakes—which may lead to impoverishment. - Risks related to impacts on potential vulnerable HH—illegal encroachers, landles. 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Provide compensation for non-land assets in case of illegal encroachment. - Design specific income restoration measures—a credit program—for HH cultivating vegetables on the lakes; conduct meaningful consultation with affected farmers to design such measures. - Development of awareness program to prevent dumping of solid waste into the lakes should also be considered. This will contribute to enhance citizen participation for environmental protection.
Water Supply System to Phu Son Solid Waste Treatment Facility and Villages	<ul style="list-style-type: none"> - This subproject will contribute to a better environment and will improve community health. It will serve the total Hue City population. - Phu Son is a mountainous commune with no water supply for the residents. People are using water from deep wells with limited amount, very poor quality—high iron content, salted—and minimal treatment. Water borne diseases occur frequently. - This subproject will strengthen equality of access to services in remote areas. 	<ul style="list-style-type: none"> - None or very limited impact on land acquisition is expected as the land used for the pipelines and other equipment are generally under existing public assets—mainly roads. - Costs of land acquisition, US\$ 4,623. 	<ul style="list-style-type: none"> - No specific risks anticipated. 	<ul style="list-style-type: none"> - Public information campaign to encourage waste separation at source and to increase awareness for related practices should be considered. This will enhance citizens' knowledge and participation in environmental protection.
Dredging and Embankment of Lap River, Kim Long Ward	<ul style="list-style-type: none"> - The subproject, by improving flow to the Huong River and also its environment quality, will improve living conditions of the people living along the river—around 250 HHs. 	<ul style="list-style-type: none"> - Mainly public land (forest) along the river which limits impacts on land acquisition; no structures located between the roads and the river on either side; some HH 	<ul style="list-style-type: none"> - Risks related to loss of source of income—forest products—which may lead to 	<ul style="list-style-type: none"> - Ensure compensation at replacement costs for the land and structures, and an assistance package in case of land acquisition. - Provide compensation for non-land

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
	<ul style="list-style-type: none"> - Proposed walkway along the River will benefit to the neighbouring community. - It will also strengthen natural hazard resilience against floods, and the citizens will be better able to cope with flooding. 	<ul style="list-style-type: none"> however have encroached on public land and have built structures on the banks; forest area may be used by HH living nearby as a source of livelihood. - Costs of land acquisition, US\$ 46,232. 	<ul style="list-style-type: none"> impoverishment; - Risks related to impacts on potential vulnerable HH—illegal encroachers, landless. 	<ul style="list-style-type: none"> assets in case of illegal encroachment. - Assess if forest is used as source of livelihood by HH living nearby, and provide restoration measures in consultation with forest users. - Development of awareness program to prevent dumping of solid waste into the river should also be considered. This will contribute to enhance citizen participation for environmental protection.
Eco Channel of the An Van Duong Development Area	<ul style="list-style-type: none"> - Potential to develop an eco-tourism corridor, which will benefit to the whole population if green features are included. - Design needs improvement to reduce the scale of land acquisition. 	<ul style="list-style-type: none"> - Significant land acquisition is anticipated with high costs; the eco-channel corridor would be between 114 m and 135.5 m wide; 148,936 m² of agriculture land—110 HH, and 3,500 m² of residential land—52 HH—will be acquired. - A community along the east side of the channel will be affected. 42 houses will be affected and 38 HH will need to be relocated. - The need for land acquisition along the eastern side must be questioned given that there is plenty of available land along the western side without existing properties. - Costs of land acquisition around US\$ 1.4 M. 	<ul style="list-style-type: none"> - Community structure may be disrupted due to the subproject. - Risks related to relocation, which may lead to social disruption; - Risks related to loss of productive land which may lead to impoverishment. 	<ul style="list-style-type: none"> - The design needs to be reviewed to reduce the scale of land acquisition. - In case of relocation of the community, meaningful consultation needs to be conducted to develop options for resettlement. - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers. - Assistance to farmers during the transition period.
Dredging and embankment of An Hoa River	<ul style="list-style-type: none"> - The subproject, by improving flow to the Huong River and also its environmental quality, will improve living conditions of the people living along the river—around 700 HH. - Structuring the embankment will 	<ul style="list-style-type: none"> - Banks of the River are densely populated; a large number of HH are expected to be partially affected; none or few are expected to require relocation; expected; no data on land 	<ul style="list-style-type: none"> - Risks related to impacts on potential vulnerable HH—illegal encroachers, landless. 	<ul style="list-style-type: none"> - Land acquisition should be avoided for the purpose of creating a boardwalk and footpath route. - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package.

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
	reduce erosion from storm water; it will benefit HH located along the banks.	<p>acquisition was available.</p> <ul style="list-style-type: none"> - Additional land acquisition may be necessary for the linear parks. - Tenure status of some houses to be checked—possible encroachment on public land; - Costs of land acquisition, US\$ 354,000. 		<ul style="list-style-type: none"> - Provide compensation for non-land assets in case of illegal occupants. - Development of awareness program to prevent dumping of solid waste into the river should also be considered. This will contribute to enhance citizen participation for environmental protection.
Improvement of the Citadel Canal/Moat	- The subproject by improving land drainage, environmental sanitation, river water quality, and enabling a better riverbank environment, will benefit the whole community.	<ul style="list-style-type: none"> - No land acquisition will be necessary. On the Citadel side the moats banks are on public and protected land; on the other side, communities are living along the moat but are separated by a road, which limits the impacts on properties. - No cost for land acquisition. 	- No specific risks anticipated.	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Development of awareness program to prevent dumping of solid waste into the river should also be considered. This will contribute to enhance citizen participation for environmental protection.
Park, paths, Drainage and Lighting in An Van Duong Development Area	- These subprojects are aimed at improving landscaping and greening the area and will benefit the neighbouring communities.	- Land acquisition for the large roads—100 m wide—and for the park has already been completed.	- No specific risks anticipated.	None
Park and Square in Administration Area, An Van Duong	- No land acquisition is expected.			
Rehabilitation/ Embankment of Dong Ba River	<ul style="list-style-type: none"> - The subproject by improving land drainage, environmental sanitation, river water quality, and enabling a better riverbank environment, will benefit the whole community. - Proposed pathway will benefit the neighbouring community. 	<ul style="list-style-type: none"> - Limited land acquisition is anticipated; 250 m² of agriculture land—5 HH, and 30 m² of residential land—5 HH—will be acquired; 5 HH affected through loss of structures; no HH to be relocated; - Most of the land needed for the subproject has already been acquired. The width of the acquired land is 6.0m from the embankment. Only on the right bank of the river in the section 	- Risks related to impacts on potential vulnerable HH—illegal encroachers, landless.	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets; - Provide compensation for non-land assets in case of illegal occupation. - Development of awareness program to prevent dumping of solid waste into the river should also be considered. This will contribute to enhance citizen participation for environmental protection.

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
		<p>K+475 to K+578 is the land area limited due to its proximity to a residential area—the distance from the embankment to existing houses is only 3.5m—and the land up to 6.0m from the embankment should be acquired, but the amount of land to be acquired is limited—estimated at about 300m²—and not one house will be removed.</p> <ul style="list-style-type: none"> - Tenure status of some houses to be checked—possible encroachment on public land; - Costs of land acquisition around US\$ 424,000. 		
Rehabilitation/ Embankment of An Cuu River	<ul style="list-style-type: none"> - The subproject, by improving land drainage, environmental sanitation, river water quality, and enabling a better riverbank environment, will benefit the whole community. - Proposed linear will benefit to the neighbouring community. 	<ul style="list-style-type: none"> - Land has already been cleared along part of the proposed subproject, therefore no land acquisition will be necessary. - Tenure status of some houses to be checked—possible encroachment on public land. - Costs of land acquisition, US\$ 23,000. 	<ul style="list-style-type: none"> - Risks related to impacts on potential vulnerable HH—illegal encroachers, landless. 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Provide compensation for non-land assets in case of illegal occupation. - Development of awareness program to prevent dumping of solid waste into the river should also be considered. This will contribute to enhance citizen participation for environmental protection.
Rehabilitation/ Embankment of Nhu Y River	<ul style="list-style-type: none"> - The subproject by improving land drainage, environmental sanitation, river water quality, and enabling a better riverbank environment, will benefit the whole community. - Fishermen's community to be protected as much as possible. 	<ul style="list-style-type: none"> - A densely populated area, with mainly fishermen, will be affected by the subproject, and 3,145 m² of residential land—37 HH—will be acquired. - 37 houses will be affected and 16 HH will need to be relocated. - Fishermen have built temporary houses on the river bank or over the river for fishing; fishing is their main source of income, but is 	<ul style="list-style-type: none"> - Fishermen's community to be affected by the subproject; income of fishermen to be affected, especially during the construction period. Community may also be vulnerable—they rely on fishing in the river, which is illegal. 	<ul style="list-style-type: none"> - Compensation at replacement cost for the loss of land and non-land assets and an assistance package. - Assess impacts on fishermen during RP preparation, and determine if fishermen can keep temporary houses after construction of the embankment, or if they will have to be relocated. - Conduct meaningful consultation with fishermen to identify income restoration measures if they have to move.

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
		<p>however an illegal activity.</p> <ul style="list-style-type: none"> - Costs of land acquisition around 323,625. 	<ul style="list-style-type: none"> - This subproject may be an opportunity to relocate the community to provide better sanitation and social services if new sources of income are provided. 	<ul style="list-style-type: none"> - Assist fishermen during the transition period. - Development of awareness program to prevent dumping of solid waste into the river should also be considered. This will contribute to enhance citizen participation for environmental protection.
Section of Central in An Van Duong Development Area, including Bridge	<ul style="list-style-type: none"> - The proposed road, a 100 m wide, will pass through villages on both sides of the river causing serious disruption of existing communities—relocation of around 60 houses. - If the road is downsized as an urban boulevard with pedestrian and cycling paths, and connection to existing road network, it may improve accessibility to the city center and improve safety for all road users. 	<ul style="list-style-type: none"> - Significant impacts on land acquisition and land acquisition due to RoW—100 m. 18,797 m² of agriculture land—75 HH, and 3,828 m² of residential land—300 HH—will be acquired. - Road will go through a populated residential area along the Nhu Y River; number of houses affected—100—and 40 HH to be relocated. - The whole community may also be temporarily relocated while new resettlement sites will be prepared along the main roads; HH will be temporarily relocated and will return to their former locations once the RS completed. - High costs of land acquisition, US\$ 1.436 Million. 	<ul style="list-style-type: none"> - Serious risk of disruption of existing community. - Risks related to relocation—40 HH—which may lead to social disruption. - Risks of delay of construction of RS may put the temporarily relocated HH, pending construction of RS, in a precarious situation. 	<ul style="list-style-type: none"> - Current design to be reviewed to reduce impacts on the existing community. - Detailed impact assessment needed to evaluate this subproject with its serious social risks. - Meaningful consultation needs to be conducted to develop options for relocation. - Assistance for temporary relocation to cover the period until RS is ready and fully serviced. - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Income restoration measures to be discussed with HH severely affected through loss of productive land—provision of input or equipment, training etc.—to be discussed with farmers.
Bui Thi Xuan Road	<ul style="list-style-type: none"> - The road upgrading intends to provide better connections to the historic monuments, and other tourist attractions in the area. - Sidewalks and lighting may improve safety for residents along the road. Bicycle lanes shared with pedestrians on the 3m wide sidewalks are proposed; they could be used by both 	<ul style="list-style-type: none"> - The design was revised with the reduction of the RoW from 19.5m to 13.5m by reducing the driveway from 10.5m to 7.5m, and the sidewalk from 4.5m to 3.0m. - Even with the RoW reduction, the subproject will have significant impacts on land acquisition: 	<ul style="list-style-type: none"> - Community structure to be affected by the enlargement of the road. - Risks related to relocation—40 HH—which may lead to social disruption. 	<ul style="list-style-type: none"> - Road width should be reduced to 7m with pavement on one side only, and provision made for a dedicated cycling lane. - If the subproject is implemented, in addition to compensation at replacement costs, the issue of relocation of HH will be critical. - Resettlement sites should be developed close to the existing location to maintain

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
	residents and tourists, and will contribute to develop eco-tourism activities in the area.	11,000 m2 of agriculture land—25 HH, and 11,849 m2 of residential land—75 HH—will be acquired; 40 HH will need to be relocated due to road upgrading on 3,0 km through a densely populated area; current Bui Thi Xuan road is narrow in some areas. - High cost of land acquisition, US\$ 2.436 Million.		the community structure, to preserve the social networks, and to allow relocated HH to continue their livelihood or to create opportunities for new livelihoods.
Huyen Tran Cong Chua Road	<ul style="list-style-type: none"> - This subproject aims to bring more tourists in Thuy Bieu commune—South-West of Hue City—by enlarging a rural road up to 16 meters—2 lanes with sidewalks—passing through a rural area but not densely populated; moderate impacts on land acquisition are anticipated. - Bicycle lanes shared with pedestrians on the 3m wide sidewalk are proposed; these could be used by both residents and tourists, and will contribute to develop eco-tourism activities. 	<ul style="list-style-type: none"> - Road widening would increase from 3.5m to two carriageways of 5m each, together with pavements of 3m on either side—total corridor of 16m. This would require significant land acquisition 2,628 m2 of agriculture land—30 HH, and 4,887 m2 of residential land—95 HH—will be acquired; 95 houses affected and 30 HH will need to be relocated. - Presence of cemeteries along the road likely to be affected. - High cost of land acquisition, US\$ 1.043 Million. 	<ul style="list-style-type: none"> - Community structure to be affected by the enlargement of the road. - Risks related to relocation—30 HH—which may lead to social disruption. 	<ul style="list-style-type: none"> - Impacts on the widening and traffic—more tourist buses—on the existing community to be assessed. - Road widths could be reduced to 7m with a pavement on one side only and provision for a dedicated cycling lane to reduce land acquisition. - If the subproject is implemented, in addition to compensation and replacement costs, an assistance package, the issue of relocation of HH will be critical. Resettlement sites should be developed close to the existing location to maintain the community structure, to preserve the social networks, and to allow relocated HH to continue their livelihood or to create opportunities for new livelihoods.
Vy Da Bridge and approaches	<ul style="list-style-type: none"> - The subproject will contribute to improved public safety, the enhancement of the liability of the city, and qualitative improvement of life in Hue. 	<ul style="list-style-type: none"> - The approach roads are located in a densely populated urban area close to the city center. - Widening the bridge from 14m to 30.0m, and the two approaches from 20m-26m to 36.0 m will result in significant land acquisition: 4,200 m2 of agriculture land—40 HH, and 	<ul style="list-style-type: none"> - Risks related to relocation—40 HH—which may lead to social disruption. 	<ul style="list-style-type: none"> - The proposed widening includes provision for large pavements should be downsized to reduce the costs of land acquisition. - Compensation at replacement cost for the loss of land and non-land assets, and an assistance package. - Resettlement sites should be developed close to the existing homes to maintain

Proposed Subprojects	Social Benefits	Potential social/ resettlement impacts	Social Risks	Mitigation measures
		3,500 m2 of residential land—55 HH—will be acquired. The 55 houses affected and 40 HH will need to be relocated. - Land acquisition costs, US\$ 2.431 Million.		current livelihoods.

Source: PPTA Consultants

4.5 Environmental Assessment

The Program will rely on the country's environmental safeguard system. Environmental impact assessments (EIAs) of subprojects are carried out by the Project Management Units (PMUs) through their EIA Consultants. No parallel EIA or initial environmental examination (IEE) has been prepared by the Program Preparation Technical Assistance (PPTA) Team. The status of EIA undertaking by the three participating cities at the time of the preparation of this report is: (i) each city is preparing one EIA report (EIAR) covering all of its proposed subprojects; (ii) the revision of draft EIARs for the Ha Giang is now underway, since the EIA consultant has received latest data on subprojects from the FS consultant; (iii) Vinh Yen subprojects is pending receipt by EIA consultants of the revised feasibility study reports; and (iv) the EIA consultant for Hue has yet to be engaged.

The Safeguard Policy Statement (SPS) of the Asian Development Bank (ADB), excludes Category A projects under a results-based lending (RBL) program. Hence, the PPTA Team carried out rapid environmental assessments (REAs) to determine the environmental categories of the subprojects. The REA findings are presented in this section and detailed as **Appendix 8**. The REAs have been shared with the EIA consultants of Ha Giang and Vinh Yen, and the PMU of Hue.

4.5.1 Environmental Benefits, Positive Impacts and Green Features

When completed, the subprojects will bring about environmental benefits and positive impacts, and will contribute to green growth. (**Table 4-22**).

4.5.2 Potential Issues, Concerns, Impacts and Mitigation Measures

Relative to Siting, Planning and Design

The screening process revealed any combination of the following siting issues/concerns in the main influence areas of all subprojects: (i) dense population and heavy development activities; (ii) losses associated to land or right-of-way acquisition; (iii) presence of utility lines; (iv) presence of trees and vegetation; (v) presence of surface water bodies, either crossed over, adjacent or close to subproject sites; (vi) vulnerability of sites to flooding during heavy rains; and (vii) potential presence of graves. In Hue, dredging, embankment, channel improvement, drainage and pavement works are proposed in, and around, the Citadel. (**Table 4-23**)

Relative to design, the salient concerns would be the inadequate consideration or incorporation in the respective designs of the above siting concerns, the sensitivity of infrastructure to climate change impacts as shown in **Table 4-24**, vulnerability of the cities to earthquakes and other natural hazards, and the following:

- Capability of the operator to maintain and repair the completed infrastructure.
- Sensitivity of groundwater and soil around the wastewater treatment plant and sanitary landfill.
- Provisions for groundwater monitoring wells at strategic locations near the wastewater treatment plant and sanitary landfill sites.
- Closure plan to restore—or at least mitigate the disturbance to and blend with—the landscape at the sanitary landfill site.
- The protection of slopes created from road subprojects that require cutting of hills.
- Demand for, availability of and sources of raw aggregates for construction.

During Program preparation, measures have been taken to minimize the above concerns:

- The REA findings have been shared with the EIA Consultants to ensure adequate considerations are made in the assessment, and appropriate measures relative to design are provided in the EMP.
- The basic subproject designs, carried out by local consultants, have been technically assessed by the PPTA team, who proposed greener alternatives, when possible, taking into account flood risk, climate change and environmental aspects. Moreover, non-structural measures have also been proposed for future implementation. Their aim is to optimize performance, durability and sustainability of the designed infrastructure in a more effectively resilient and low impact way. Some of these measures are related to decision support system tools and capacity building so as to improve management and operations.

Table 4-22. Environmental Benefits, Positive Impacts and Green Features

Subproject Type	Benefit/s	Positive Impact/s	Green Feature/s
Drainage, eco-channel, canal rehabilitation or improvement	<ul style="list-style-type: none"> Improved stormwater management Improved stream, river, lake, channel, and canal flow capacity 	<ul style="list-style-type: none"> Improved environmental sanitation Flooding alleviated Improved water quality of water bodies Reduced risks of human contact with sewage overflowing from sewers during flooding 	<ul style="list-style-type: none"> Supports disaster risk management Contributes to the livability of, and improved quality of life in the cities
Dredging of rivers and lakes	<ul style="list-style-type: none"> Improved river channel capacity and its ability to convey water. Improved storage capacity of lakes. 	<ul style="list-style-type: none"> Flooding alleviated or land drainage improved Improved environmental sanitation Improved water quality of the rivers and lakes and eventually, improved fish and aquatic habitat 	<ul style="list-style-type: none"> Supports disaster risk management Restores natural resource efficiency and quality Contributes to the livability of, and improved quality of life in the cities
Embankments	<ul style="list-style-type: none"> Stabilized banks of lake and rivers 	<ul style="list-style-type: none"> Bank erosion alleviated Improved water quality of the rivers and lakes, and eventually, improved fish and aquatic habitat 	<ul style="list-style-type: none"> Supports disaster risk management Restores natural resource efficiency and quality Contributes to the livability of, and improved quality of life in the cities
Parks, greening and trees; tree planting on sidewalks	<ul style="list-style-type: none"> Enhanced cityscape, more vegetated areas and trees in the cities 	<ul style="list-style-type: none"> City becomes more conducive to habitation by birds, insects, etc; and physical activities or exercise, e.g., walking, running, biking, and promoting public health Improved release of O₂, capture of suspended particles, GHG absorption, CO₂ storage, noise absorption, thus, enhancing ambient air quality Reduced heat stress Increased rain capture, water storage and increased soil absorption of rainwater, alleviating flooding in the cities. 	<ul style="list-style-type: none"> Contributes to reduced GHG emissions Supports disaster risk management Fosters urban biodiversity Contributes to livability of, and improved quality of life
Exhibition/linkage center for business support	<ul style="list-style-type: none"> Facilitated growth in green production 	<ul style="list-style-type: none"> Less depletion of natural resources with the creation of products that can be partially or fully re-used or reclaimed Minimized emissions; hence, reduced waste for disposal and reduced pollution 	<ul style="list-style-type: none"> Supports resource conservation Contributes to the improvement of the quality of environment Contributes to livability of, and improved quality of life

Subproject Type	Benefit/s	Positive Impact/s	Green Feature/s
Roads and bridges	<ul style="list-style-type: none"> Improved mobility and access Improved road surfaces 	<ul style="list-style-type: none"> Reduced travel time Improved public safety on roads Improved access of people in: communes and new urban areas to services and jobs in the city center; and the city center to recreational and tourism services outside. 	<ul style="list-style-type: none"> Supports energy conservation Contributes to reduced GHG emissions Contributes to livability of, and improved quality of life in the cities
Sanitary landfill	<ul style="list-style-type: none"> Improved solid waste disposal 	<ul style="list-style-type: none"> Improved environmental sanitation Air, water and land pollution mitigated. 	<ul style="list-style-type: none"> Controls and manages GHG emissions Contributes to livability of, and improved quality of life in Ha Giang and Hue
Sewerage system, wastewater treatment and tertiary wastewater sewers	<ul style="list-style-type: none"> Improved municipal wastewater management 	<ul style="list-style-type: none"> Improved environmental sanitation Reduced risks of human contact with sewage from combined sewers during flooding 	<ul style="list-style-type: none"> Contributes to livability of and improved quality of life in Vinh Yen
Water supply system extension	<ul style="list-style-type: none"> Increased coverage of reliable supply of potable water to about 450 households in three villages Water supply for future solid waste facility. 	<ul style="list-style-type: none"> Improved health and sanitation 	<ul style="list-style-type: none"> Contributes to improved quality of life in the three villages currently without potable water supply

Source: PPTA Consultants

Table 4-23. Issues/Concerns Relative to Siting

Issues/Concerns	Ha Giang	Hue	Vinh Yen
Socio-Economic			
Population density	<ul style="list-style-type: none"> Subject to drainage works - the densely populated sections of Minh Khai, Tran Phu and Nguyen Trai Wards 	<ul style="list-style-type: none"> Sites of works in and around the Citadel; other dredging and embankment works; and some road and bridge works – in city center 	<ul style="list-style-type: none"> Sites of wastewater collection system works - densely populated sections in the city
Development activities	<ul style="list-style-type: none"> Subject to drainage works – city center wards of Minh Khai and Tran Phu. 	<ul style="list-style-type: none"> Sites of works in and around the Citadel; other dredging and embankment works; and some road and bridge works – in city center 	<ul style="list-style-type: none"> Sites of wastewater collection system works – in city center
Other socio-economic concerns	<ul style="list-style-type: none"> Losses and physical relocation associated with land or right-of-way acquisition Existing water supply mains and tertiary water supply pipes in or crossing or close to footprints of drainage works 	<ul style="list-style-type: none"> Losses associated with land or right-of-way acquisition Existing utility lines and power supply poles in drainage, pavement and road works Railway crossing Ke Van River and An Hoa River 	<ul style="list-style-type: none"> Losses associated with land or right-of-way acquisition Existing utility lines and/or power supply poles in or crossing, or close to, sections of road works and sites for wastewater collection and treatment

Issues/Concerns	Ha Giang	Hue	Vinh Yen
	<ul style="list-style-type: none"> Narrow alleys and traffic flows on main roads in the main influence area of drainage works Traffic flow on the National Road Number 2 Power supply poles in, or adjacent to, the proposed works at the National Road Number 2 Rice fields adjacent to subproject footprints. 		<ul style="list-style-type: none"> works Rice growing, duck raising and/or aquaculture activities adjacent to subproject footprints.
Physical Cultural			
Cultural heritage	None	<ul style="list-style-type: none"> Improvement of Citadel Canal located in the buffer area of the Citadel¹ The Royal River, zoned as a world heritage property inside the Citadel¹ – drainage and pavement rehabilitation will include works at eight locations—discharging points—along the riverbank. The Royal River is the main receiving water body of combined storm and wastewater collected by the existing drainage system in the Citadel. Drainage improvements will improve the quality of life of residents in the Citadel. 	None
Other physical cultural resources	<ul style="list-style-type: none"> Potential graves in, or close to road works' footprints 	<ul style="list-style-type: none"> Potential graves in, or close to road works' footprints 	<ul style="list-style-type: none"> Potential graves in, or close to road works' footprints
Biological			
Presence of trees and other vegetation	<ul style="list-style-type: none"> Presence of trees and other vegetation - in, or adjacent to almost all subproject footprints 	<ul style="list-style-type: none"> Presence of trees and other vegetation – in, or adjacent to, almost all subproject footprints 	<ul style="list-style-type: none"> Presence of trees and other vegetation – in the alignment of road works and wastewater treatment plant site
Physical			
Proximity to wetlands—including water resource/s	<ul style="list-style-type: none"> Lo River, Mien River and Me Stream - subject to embankment works Lo River – to be crossed by bridge works <p>road works along the east bank of its southern section</p>	<ul style="list-style-type: none"> Rivers and lakes - sites of dredging, embankment and bridge works. 	<ul style="list-style-type: none"> Dam Vac Lake and Phan River - sites of dredging works. Vac Swamp is one of the five marshes and swamps that are among the 68 wetland sites of biodiversity and environmental values existing in the country.²
	<ul style="list-style-type: none"> Mien River – both sides subject to road works 	None	<ul style="list-style-type: none"> Road and wastewater collection system works will either cross, or be adjacent or

Issues/Concerns	Ha Giang	Hue	Vinh Yen
	<ul style="list-style-type: none"> Drainage streams - subject to cleaning and rehabilitation works 		close to, streams and/or ponds.
Vulnerabilities, Climate Change, Disaster Risks			
Vulnerability to flooding	<ul style="list-style-type: none"> Sites for, and main influence area of drainage and some road works - vulnerable to flooding during heavy rains. Flooding in the city is mainly caused by overflows of rivers. Causes are any one or combination of increase in flows particularly during heavy rains, water releases from upstream dams and/or limited or reduced capacity of urban drains. 	<ul style="list-style-type: none"> Citadel – subject to recurrent flooding Sites for, and main influence areas of dredging, embankment, drainage, pavement and canal improvement works–vulnerable to flooding Hue City is some 18 km from the East Sea, also affected by sea level rise via tidal Perfume River. City is located in the lower part of Perfume River basin. Heavy rains and high waters from river basins also cause flooding. 	<ul style="list-style-type: none"> Sites for, and/or main influence area of wastewater collection, wastewater treatment plant and road works - vulnerable to flooding during heavy rains Vinh Yen City is located in the Phan-Ca Lo River Basin, which is a highly meandering system of small rivers, with several lakes, ponds and canals, rendering the City highly prone to flooding. Rivers overflow when water level rises 8/9 m.
Seismicity	<ul style="list-style-type: none"> City - within “least to moderate” seismicity zone ³ 	<ul style="list-style-type: none"> City - within “least” seismicity zone ³ 	<ul style="list-style-type: none"> City - within “moderate” seismicity zone ³
Landslides	<ul style="list-style-type: none"> Subproject sites are not in, or close to, highlands that are prone to landslides 	None	None
Other hazards	<ul style="list-style-type: none"> Whirlwinds and ice rain experienced in the city. 	None	None
Climate change	<ul style="list-style-type: none"> Changes in temperature, precipitation, or extreme events patterns–could affect the sustainability of proposed subprojects. 	<ul style="list-style-type: none"> Changes in temperature, precipitation, or extreme events patterns – could affect the sustainability of proposed subprojects. 	<ul style="list-style-type: none"> Changes in temperature, precipitation, or extreme events patterns – could affect the sustainability of proposed subprojects.

¹ The Monument and Site Protective Zoning Map – Citadel of Hue, Hue Monuments Conservation Center, dated 2011 and obtained from <http://whc.unesco.org/>.

² Vac Swamp is not among the 8 Ramsar sites in Viet Nam (as of 15 June 2015) and not among the 16 wetlands recognized by the GoV (per Appendix D: Wetland Sites of Biodiversity and Environmental Value in Viet Nam in the Overview of Wetlands Status in Viet Nam Following 15 Years of Ramsar Convention Implementation, Viet Nam Environmental Protection Agency, 2005.

³ Based on Earthquake Hazard/Earthquake Risk Assessment in Vietnam, Seismic Risk Management Asia Pacific Region, Dec 2003.

Source: PPTA Consultants

Table 4-24. Sensitivity of Program Infrastructure to Climate Change Impacts*

Subproject Type	Increased temperature	Increased very hot days	Decrease in rainfall	Increase in precipitation	Increased frequency & intensity of storms	Increased intensity of extreme wind
Bridge	√	√		√	√	√
Drainage		√	√	√	√	√
Embankment				√	√	√
Road	√	√		√	√	
Sanitary landfill	√	√		√	√	√
Wastewater collection and treatment			√	√	√	√
Water supply extension (potential tanks)	√	√	√	√	√	√

Source: PPTA Consultants

Notes:

* **Appendix 8** gives sample impacts of climate-induced changes on the above infrastructures.

√ = Subproject type is sensitive to particular climate change impact.

During Construction

Local air pollution from dust, gas emissions and noise, surface water resources problems and associated impacts on aquatic ecosystems, removal of trees and vegetation, impacts on the sustainability of urban services, traffic and road blocking, blocked accesses, temporary local flooding, accidental damage to existing utility lines and community and workers' health and safety hazards are the temporary issues, concerns and impacts during construction. These are reversible that can be mitigated through simple or uncomplicated measures, integral to socially and environmentally responsible construction practices. Impacts relative to the extraction of natural aggregates may be mitigated by obliging contractors to obtain aggregates only from quarries that are still operating within the allowed extraction threshold according to their environmental clearances and permits to operate.

Dust during construction, impacts will come from earthworks, quarrying for aggregates, rock crushing, transport of fine aggregates and residual soils, movements of construction vehicles over unpaved roads, unloading or loading of fine aggregates and residual soils, and dry exposed areas. Gas emissions and fumes will be generated by the movement and operation of construction vehicles and equipment, asphalt processing, burning of waste, use of hazardous substances, such as those emitting volatile organic compounds (VOCs). Noise will be generated from the operation of equipment and movement of vehicles, especially those that are run by diesel, are poorly maintained, and have inefficient mufflers. Construction activities, such as drilling, excavation, breaking of pavements, unloading of aggregates, concrete mixing, and rock crushing, among others, will also emit noise. Vibration will be caused by the aforementioned activities and intensity will depend on the sensitivity of the ground conditions of the site.

Water resources at, near to or downstream of the subproject sites will be exposed to impacts from: (i) sedimentation or siltation caused by indiscriminate earthworks; (ii) improper management of dredged materials, waste and hazardous substances; (iii) irresponsible stockpiling of aggregates; (iv) leaks or accidental spills of materials, particularly hazardous substances and waste; and (v) poor sanitation practices of workers. Polluted surface waters will be detrimental to aquatic biodiversity.

Dredging activities will temporarily change the natural flow of a river or lake. Often, such a change in water flow destroys aquatic habitats. Dredging of river beds or lakes will destroy existing aquatic habitats, and life in the dredging influence area.

Removal of trees and vegetation will be inevitable in most works. Planning must ensure that no indiscriminate removal will occur. Prior to the removal of trees in the urban area, the following must be obtained: (i) the approval of the City People's Committee in Ha Giang and Hue; and (ii) an agreement among the Provincial People's Committee (PPC) and Urban Environment Company (URENCO) of Vinh Phuc, and the PMU of Vinh Yen.

The following will potentially impact on the sustainability of urban services:

- Inadequate management of waste, silt and aggregate stockpiles will mean that these materials will reach the drainage system; thus, compromising their effectiveness.
- Indiscriminate dumping of waste generated during construction will strain the capacities of URENCO/HEPCO in waste collection services, in keeping the cities clean.
- Volumes of solid waste will be deposited into the cities' disposal sites.
- Accidental damages to utility lines during construction will cause the disruption of services.

The existing traffic volumes in the three cities are generally low; at peak hours, moderate. The volume of vehicle movements generated from, and the likely closure of some roads and lanes leading to, the construction activities will cause traffic build-up and choke points.

- In Ha Giang, at intersections—some three-way—closest to drainage and road works in populated areas.
- In Hue, in the vicinities of the: (i) citadel affected by the drainage, dredging and embankment works; and (ii) road improvement or expansion works at or near to the city center.
- In Vinh Yen, in the vicinities of the wards for the works on tertiary wastewater sewers and sewerage system.

Road and access blocking during construction will cause public inconvenience and disruption of socio-economic activities, and pose safety hazards. During the rainy season, the impact will be worse, especially when local flooding occurs. When surface drainage is impeded by construction activities and stockpiles, and when existing drainage systems are clogged with construction debris and sediments, local flooding is inevitable during the rainy season.

Existing utility lines at or adjacent to work sites are exposed to accidental damage. Deferred repair of damages will cause: (i) inconvenience to affected households and socio-economic activities; (ii) disruption of socio-economic activities; and/or (iii) contamination of water supply.

During construction, public health and safety will be exposed to hazards and risks associated with dust, gas emissions, noise, vibration, poorly managed waste and hazardous substances, disruption of urban services, traffic, road and access blocking, open excavations, potential transmittable diseases from the construction workforce, potential fires and explosions, among others.

The health and safety of construction workers will be exposed to dust, gas emissions, noise, vibration, wastes and hazardous substances, movement and operation of construction equipment, open excavations, potential fires and explosions, and the weather, among others. The possibility of finding unexploded ordinance (UXO) also poses risks to workers' safety.

Measures to keep construction impacts in subproject sites to the minimum or acceptable levels are mostly good engineering and construction practices, commonly used at construction sites in urban settings. These are known to contractors, and can easily be instituted without difficulty. Some of these are shown in **Table 4-25**. The effective conduct of the following are additional, but crucial mitigation measures: (i) including the EMP, which is prepared based on the approved EIAR, in the bidding document package; (ii) construction management by the contractor; (iii) EMP implementation by the contractor; (iv) construction supervision and close monitoring of EMP implementation by the PMU; (v) observance of a Program grievance redress mechanism by all concerned parties; and (vi) community participation in the monitoring of EMP implementation.

Table 4-25. Environmental Codes of Practice during Construction

Issues/Concerns/ Impacts	Some Mitigation Measures
All issues, concerns and impacts	The Contractor shall implement the EMP, addressing, as minimum, the requirements of the EMP that will be prepared after EIAR approval, and based on the Environmental Management and Monitoring Programs featured in the approved EIAR.
Air pollution:	The Contractor shall: <ul style="list-style-type: none"> • Be responsible for complying with QCVN 05:2013/BTNMT, on ambient air quality.
(i) Dust	<ul style="list-style-type: none"> • Prepare and implement a dust control plan to minimize dust generation, ensuring: (i) dust is not causing a nuisance to the surrounding communities; and (ii) the working environment is safe. • Include in the dust control plan such measures as: (i) segmentation of works; (ii) watering of dry exposed surfaces, stockpiles of fine aggregates and soil at least twice a day, or as necessary; (iii) locating stockpiles against prevailing wind directions and providing wind barriers around stockpiles; (iv) for trucks to have tarpaulin cover on aggregate and waste loads and maintaining a minimum of 2' freeboard; and (v) minimizing drop heights and spraying water when loading or unloading dry aggregates.
(ii) Gas emissions	<ul style="list-style-type: none"> • Enforce all construction-associated vehicles to comply with GoV's regulations on vehicle emission standards, and ensure they have valid "certificates of conformity from inspection of quality, technical safety and environmental protection" following Decision No. 35/2005/QD-BGTVT. • Apply and use clean technology, such as: (i) asphalt processing at lower temperature; (ii) recycled asphalt, if feasible or would not impact on the service life and technical qualities of the structures; (iii) technologies and machinery with pollution control devices; (iv) low VOC emitting materials; and (v) clean-fueled equipment. • Limit equipment idling to five minutes. • Prohibit waste burning; dispose waste at the designated disposal site/s promptly. • Enforce rules on workers to wear provided protective nose masks.
Noise and vibration	The Contractor shall: <ul style="list-style-type: none"> • Be responsible for complying with QCVN 26:2010/BTNMT, on permitted maximum noise levels in public and residential areas, and QCVN 27:2010/BTNMT, on permitted maximum levels of vibration from construction and industrial activities in public and residential areas. • Set up noise barriers, e.g., temporary fences, enclosures around generator sets. • Restrict noisy and vibrating operations within the prescribed time period for daytime noise and vibration according to respective standards. • Use only equipment that emits least noise and vibration, e.g., electrically powered equipment, hydraulic tools with efficient mufflers and silencers. • Enforce turning off of equipment when not use.
Water resources problems	The Contractor shall: <ul style="list-style-type: none"> • Be responsible for complying with QCVN 08:2008/BTNMT, on surface water quality. • Prepare and implement the following plans with measures not limited to those below: <ul style="list-style-type: none"> - Eco-friendly wastewater, solid and hazardous waste management plans: (i) providing adequate sanitation facilities and water supply, adequately managing wastewater from sites and workers' camps; (ii) enforcing proper sanitation practices upon workers and suppliers; (iii) minimizing waste generation through reuse and recycling; (iv) adequate handling and storage and prompt disposal of solid and hazardous waste; (v) restricting maintenance of vehicles and equipment on site; and (vi) enforcing on workers rules to implement environmental sanitation. - Drainage and sediment control plan: (i) silt fences, barrier nets, stilling humps, etc.; (ii) stockpiling on flat grounds, and away from, not obstructing, main surface drainage routes; (iii) maintaining drainage system; and (iv) minimizing the necessary disturbance of slopes and protecting disturbed slopes. • Using less hazardous substances and storing no more such substances on site than needed in the short period.
Removal of trees and vegetation	The Contractor shall: <ul style="list-style-type: none"> • Prepare and implement a Vegetation Clearance and Restoration Management Plan, to include such measures as: (i) obtaining the necessary approval from the CPC; (ii) avoiding unnecessary removal of trees and vegetation; (iii) providing temporary fences or markers to guide vehicle movements and parking; and (iv) replacing or restoring removed trees and

Issues/Concerns/ Impacts	Some Mitigation Measures
	damaged vegetation in coordination with the concerned CPC.
Traffic and road blocking	<p>The Contractor shall:</p> <ul style="list-style-type: none"> • Prepare and implement a traffic management scheme, coordinated with local traffic authorities and affected communities, with such measures as: (i) posting notices on road closure, traffic rerouting plan at strategic places, at a minimum one week before effectivity; (ii) posting traffic (flag) persons during all working hours; (iii) spreading the schedule for materials delivery in non-peak hours; and (iv) enforcing proper vehicle and equipment parking within agreed areas.
Blocked accesses	<p>The Contractor shall:</p> <ul style="list-style-type: none"> • During IEC, prior to mobilization, inform communities regarding work phasing and schedules, anticipated access blocking, provisions for safe access for blocked properties, etc. • Provide safe accesses to blocked properties, e.g., steel planks of adequate grade, width and length, and if necessary, with guide rails.
Accidental damage to utility and service infrastructure	<p>The Contractor shall:</p> <ul style="list-style-type: none"> • During mobilization coordinate with relevant utility companies for the exact locations and set contact arrangements in case of damage/s. • In case of accidental damage, advise the concerned utility company and/or the PMU, at once. • Give at least one week prior notice on planned service interruption due to relocation of existing utility lines and/or for interconnection and streamlining.
Community health and safety	<p>The Contractor shall:</p> <ul style="list-style-type: none"> • Prepare and implement a community safety plan in coordination with the affected wards and communes that includes: (i) the grievance redress mechanism; (ii) measures to mitigate access blocking, local flooding, accidental damage to existing utility and service infrastructure and its impact; (iii) structural measures to restrict the public from accessing the main influence area of subproject; and (iv) emergency response plan and system. • Have a well-trained, well-equipped emergency response team. • In collaboration with the PMU, conduct adequate social preparation on construction activities, associated health and safety risks, and grievance redress mechanism, at least one month before award of Contract.
Workers' health and safety hazards	<p>The Contractor shall:</p> <ul style="list-style-type: none"> • Be responsible for complying with Labor Code. • Orient workers prior to mobilization on occupational health and safety hazard, and strict observance of safety measures, including the procedures to follow when encountering chance find of UXO. • Strictly enforce rules on workers' use of personal protective equipment. • Provide safe accommodation with reliable potable water supply and adequate sanitation facilities. • Conduct regular drills on emergency situations and emergency response.
Restoration of affected areas	<p>The Contractor shall:</p> <ul style="list-style-type: none"> • Restore the borrow pits that will no longer be in use, disposal areas, site facilities areas, workers' camps, stockpiles areas, working platforms and any areas temporarily occupied during construction of the subproject works. • Start revegetation at the earliest opportunity: (i) use the appropriate local species of vegetation; and (ii) plant trees and grass on exposed land, and on disturbed slopes to prevent erosion and collapse. • Re-profile spoil heaps and excavated slopes. • Remove all contaminated soil, and haul and bury in designated disposal areas. • Restore all access roads and bridges damaged by subproject activities.

Source: PPTA Consultants

During Operation

During the operation, the main potential environmental impacts relate to the operation of the sanitary landfill sites and the wastewater treatment plant, and of other works, but to a lesser extent. Anticipated or potential impacts and concerns include, among others:

- From sanitary landfill operations in Ha Giang: (i) dust, gas emissions and odor; (ii) water resource problems from inadequate management and treatment of leachate and gas; (iii) influx of insects, rodents and pests; (iv) workers' health and safety hazards; and (v) health and safety hazards of few households residing along, and road users of the main road leading to the landfills.
- From the operation of the wastewater treatment plant in Vinh Yen: (i) local air pollution due to gas emissions and odor; (ii) water resource problems such as contamination from substandard effluent discharge and eutrophication of nearby river/stream; (iii) water and soil contamination from potential overflow of ponds and spread of untreated wastewater during extreme weather events; (iv) waste and sludge disposal; (v) community and workers' health and safety hazards and risks, as well as nuisance, associated with odor, gas emissions, ground water pollution, and vectors; and (v) workers' health and safety hazards from exposure to chemicals used in operations, contact with raw sewage or wastewater during repair, maintenance and emergency response works.
- From completed roads, in sections passing through existing residential and developed areas, among others: (i) safety hazards; (ii) disruptions in the existing way of life, and social patterns and activities enjoyed by the residents; (iii) nuisance and health hazards from increasing traffic, noise, vibration, air emissions; and (iv) potentially, local flooding if drainage in surrounding areas is impeded because of a new road's higher elevation.
- From completed roads, in sections passing through agricultural lands, and possibly land used for aquaculture, among others: (i) safety hazards of rice farmers and/or owners of fishponds; and (ii) severed farm units, which could mean potential disruption in irrigation services and drainage patterns, and potential access constraints.
- For water supply extension: (i) unsustained reliability of supply because of inadequate consideration in design of decrease in precipitation or drought; and (ii) delivery of unsafe water due to the delay in repairs of broken pipes.
- Completed works unable to sustain their effectiveness over their life because of inadequate consideration and incorporation of the following in designs: (i) considerations of growth; (ii) incorporation of increasing precipitation and temperature, hazards and risks arising from climate change, as well as seismicity in the Program cities; and/or (iii) crossing streams and sustaining their hydrology.
- Unsustained effectiveness of services of all completed works and because of insufficient operation and maintenance (O&M) budgets and/or lack of O&M capacity.

The magnitude of impacts arising from the operation of completed works will depend on the degree of environmental considerations made from the start of subproject development through to operation. Some basic non-structural mitigation measures are as follows: (i) appropriate incorporation in designs the recommendations arising from the analyses applying DSS and from the technical assessment that recommend green facilities and low impact development technologies; (ii) effective supervision of detailed design and construction, and performance monitoring by the PMU; (iii) quality construction by the contractors; (iv) sufficient provisions in the annual budget for operation, maintenance and repair, as well as for emergency response; (v) undertaking the recommended environmental effects monitoring during operation; (vi) prompt action to raised issues, concerns and grievances; (vii) operators to engage and designate a staff to oversee EMP implementation and prepare the required environmental monitoring reports; and (viii) conduct of engineering investigation after every natural hazard, and take prompt action on damages. Some specific measures are shown as **Table 4-26**.

Table 4-26. Environmental Codes of Practice during Operation

Issues, Concerns and Impacts	Some Mitigation Measures
All issues, concerns and impacts	<p>The operators of all completed subprojects shall implement the EMP, addressing at a minimum, the requirements that will be prepared after EIAR approval and based on the Environmental Management and Monitoring Programs featured in the approved EIAR.</p> <p>The operators of the sanitary landfill and wastewater treatment plant (WWTP) shall formulate and implement their respective Operations Manual that incorporates mitigation and monitoring measures, addressing, at a minimum, the requirements of the EMP—as stated above.</p>
Air pollution from dust, gas, odor and/or noise	<p>The operators of the sanitary landfill and wastewater treatment plant (WWTP) shall:</p> <ul style="list-style-type: none"> ▪ Be responsible for complying with QCVN 05:2013/BTNMT, on ambient air quality, and QCVN 26:2010/BTNMT, on permitted maximum noise level in public and residential areas. ▪ Conduct air and noise monitoring, as prescribed in the EMP. ▪ Maintain equipment promptly and keep the premises clean. ▪ Have densely treed perimeter buffer area to mitigate noise and odor. <p>The operator of the sanitary landfill shall:</p> <ul style="list-style-type: none"> ▪ Mitigate dust: (i) water access road, internal roads, soil cover stockpile during the dry season; (ii) enforce maximum speed for collection trucks—say, 40 kph—on access and internal roads. ▪ Mitigate gas emissions: (i) daily cover the active waste cell; (ii) make provisions for gas management and monitoring wells; (iii) recover recyclable materials that will emit volatile organics; (iv) flaring or more appropriate method for treating the gas collected; (v) install gas alarm system; (vi) provide effective bottom and side liners of active cells; and (vii) final capping of completed cells. <p>The operator of the WWTP shall:</p> <ul style="list-style-type: none"> ▪ Promptly maintain ponds and the entire facility. ▪ Implement proper storage and prompt disposal of sludge at the designated disposal area.
Water resource Problems	<p>The operators of the sanitary landfill and WWTP shall:</p> <ul style="list-style-type: none"> ▪ Be responsible for complying with QCVN 08:2008/BTNMT, on surface water quality; QCVN 09:2008/BTNMT, on ground water quality; QCVN 25:2009/BTNMT, on the quality of wastewater from solid waste landfill sites; and QCVN 14:2008/BTNMT, on domestic wastewater quality. ▪ Conduct effluent, surface water and groundwater quality monitoring as prescribed in the EMP. ▪ Collect rain water to augment water supply for operations. ▪ Implement proper storage and prompt disposal of sludge at the designated landfill.
Pests and vectors	<p>The operators of the sanitary landfill and wastewater treatment plant (WWTP) shall:</p> <ul style="list-style-type: none"> ▪ Keep premises clean. ▪ Implement fumigation, especially during the warm and hot season. ▪ Install or use fly traps. ▪ Use insect-repellant trees and shrubs to green the site, e.g., neem, eucalyptus, citronella, etc. <p>The operator of the sanitary landfill shall:</p> <ul style="list-style-type: none"> ▪ Apply daily cover, or as prescribed.
Overflow of WWTP and leachate treatment facility	<p>The operators of the sanitary landfill and WWTP shall:</p> <ul style="list-style-type: none"> ▪ Prepare and implement contingency measures, e.g., pump and spilling basin.
Community health and safety	<p>The operators of the sanitary landfill and WWTP shall:</p> <ul style="list-style-type: none"> ▪ Maintain a treed perimeter buffer area or strip, and strictly disallow unauthorized entry. ▪ Observe the grievance redress mechanism.
Workers' health and safety hazards	<p>The operators of the sanitary landfill and WWTP shall:</p> <ul style="list-style-type: none"> ▪ Be responsible for complying with the Labor Code. ▪ Provide protective wear and enforce their use while on the premises.

Issues, Concerns and Impacts	Some Mitigation Measures
	<ul style="list-style-type: none"> ▪ Enforce observance of proper sanitation and hygiene practices. ▪ Orient workers prior to mobilization, on occupational health and safety hazards, and strict observance of safety measures. ▪ Set up a well-trained, well-equipped emergency response team and conduct regular drills.
Unsustained effectiveness of operations from insufficient O&M capacity	<p>The operators of the sanitary landfill and WWTP) shall:</p> <ul style="list-style-type: none"> ▪ Prepare an O&M Manual that incorporates a continuing capacity building program and budgets the financial requirements for effective O&M, including environmental mitigation, monitoring and reporting.
Unable to cope during seismic and extreme weather events	<p>The operators of the sanitary landfill and WWTP shall:</p> <ul style="list-style-type: none"> ▪ After every seismic or extreme weather event, conduct due diligence of the structural and operational integrity of facilities and implement the necessary corrective actions without delay.

Source: PPTA Consultants

During Decommissioning of the Sanitary Landfill

During decommissioning of sanitary landfill operations, gas generation, gas migration, leachate generation impacting on water resources, and damage/s during seismic or extreme weather event are the salient concerns. Mitigation measures include, among others: (i) conduct of appropriate environmental monitoring for gas, effluent from the leachate treatment facility, and ground and surface water quality; (ii) restricting access to the site by unauthorized persons; and (iii) prompt due diligence of the structural integrity of the sanitary landfill after a natural hazard.

4.5.3 Findings and Conclusions

The subprojects under the Program are not among the ADB prohibited investment activities listed in Appendix 5 of the SPS. Based on the REA, the subprojects are not environmentally critical.

All subprojects are outside “environmentally sensitive” areas, except for the drainage and pavement rehabilitation works in Hue. These include eight discharging points along the banks of the Royal River inside the Citadel. The Royal River, which is zoned as a *world heritage property*, is the main receiving water body for the storm and wastewater collected by the existing drainage system in the Citadel. The development inside the Citadel is impacted by recurrent flooding, affecting more than 650,000 residents. The subproject is necessary to improve the quality of life in the Citadel, and improve the quality of the Royal River. Impacts during construction can be mitigated by contractors without difficulty. With close monitoring of constructor’s environmental performance, it is expected that impacts will not threaten the quality of the waters in, and the physical conditions of the banks of the Royal River.

For other subprojects, the most sensitive sites are the rivers and lakes that: (i) will be dredged and/or whose banks will be stabilized with embankments; (ii) will be crossed by bridge and road works; or (iii) are along road works. Preventive and mitigation measures must be taken to ensure least impacts on the relevant rivers and lakes. Proper approvals will be obtained from the PPC for the works in the buffer area of the Citadel.

The basic subproject designs have been technically assessed by the PPTA team, and greener alternatives have been proposed, where possible, taking into account flood risk, climate change and environmental aspects. Non-structural measures have also been proposed. The aim is to optimize performance, durability and sustainability of the designed infrastructure in a more effective, resilient and low impact way. Some of these are related to decision support system tools and capacity building so as to improve management and operations.

The few adverse impacts of high significance during construction will be temporary and short-term—most likely to occur only during the peak construction period. The extent of adverse impacts is expected to be local, confined within the subprojects’ immediate and/or main areas of influence, sources of aggregates, waste disposal sites, and the routes to and from these sites. These will not be sufficient to threaten or

weaken the surrounding resources. With mitigation measures in place, and ensuring that the bulk of works are completed—or at least almost complete—prior to the onset of the rainy season, the potential adverse impacts during construction would be more site-specific.

The conscientious implementation of the EMP will mitigate the impacts and lower their residual significance to, at least, “moderate” levels. Simple or uncomplicated mitigation measures, integral to socially and environmentally responsible construction practices, are commonly used at construction sites in urban settings and are known to contractors. Hence, mitigation measures would not be difficult to design and institute.

Direct impacts during operation will mainly come from those of the sanitary landfill and wastewater treatment plant. Their operations are expected to be guided by respective operations manuals. If complemented with a continued capacity building program on operations and maintenance, the direct impacts are not expected to have long-term, persistent, permanent or irreversible adverse impact on human health and safety, air quality, water quality, soil quality, and the biological environment.

The Program will bring the following benefits to respective cities: (i) improved lake storage and river or channel capacities and their flows through the dredging works in Hue and Vinh Yen; (ii) improved stormwater management because of drainage works in Ha Giang and Hue; (iii) stabilized banks of rivers and lakes as a result of embankment works in Hue and Ha Giang; (iv) enhanced cityscape because of the public park in Vinh Yen; (v) improved mobility and access between city centers and suburban, new urban expansion and service areas in the three cities; (vi) improved solid waste management in Ha Giang; (vii) improved municipal wastewater management in Vinh Yen; and (ix) extended water supply coverage to three villages outside Hue.

The green features of the Program include: (i) support to disaster risk management; (ii) restoration of natural resource efficiency and quality; (iii) support to resource conservation; (iv) fostering urban biodiversity; (v) support to energy conservation; (vi) control, management and contribution to the reduction, of GHG emissions; and (vii) contribution to the livability of, and improved quality of life in the cities.

Based on these findings, it is concluded that the Program is a Category B undertaking and contributes to the realization of the respective green city vision of the three cities.

During detailed engineering design should change/s in scale, technological processes in construction or operation, or location of any subproject warrant a remake of the EIAR under the safeguard system of the GoV, it is advised that the concerned subproject/s be re-screened using the ADB process to verify if the Program’s B category is retained. The PMUs shall ensure that the recommended structural and non-structural measures arising from the technical assessment of the basic subproject designs are appropriately considered and incorporated.

4.6 Poverty, Gender, and Social Assessment

This section summarises the findings of the poverty, gender and social assessment; more details are provided as **Appendix 9**.

4.6.1 Poverty Profile

The cities of Ha Giang, Hue, and Vinh Yen are experiencing rapid urban growth. Urbanization is propelled by the shift from agriculture to industry and services, and rural to urban migration. All three cities serve as the political, economic, social and cultural centers of their respective provinces. However, they are struggling to cope with the increasing demand for infrastructure and services for the growing population. **Table 4-27** shows brief profiles of the three cities.

Table 4-27. Profiles of Ha Giang, Hue and Vinh Yen Cities, 2014

	Hue City	Vinh Yen City	Ha Giang City
Land area	71.70 km ²	50.81 km ²	135.33 km ²
Population	348,279	102,502	53,661
Number of Men	169,682 (48.72%)	52,207 (50.09%)	25,765 (49.05%)
Number of Women	178,597 (51.28%)	50,295(49.91%)	26,768 (50.95%)

Source: PPTA Consultants

Poverty rates vary among regions of Viet Nam, where the North East Mountain Region, in which Ha Giang province is located, had one with the highest poverty rates at 33.5% in 2012—based on the General Statistics Office (GSO) – World Bank (WB) figures. This is higher than the overall poverty rate of Viet Nam. The poverty rate in the North Central Coast region, which includes Hue, is 21.2% which was slightly higher than that of the country. The Red River Delta, where Vinh Yen is located, had a poverty rate of 7.4% in 2012. Using MOLISA's poverty rate figures, in 2013, the poverty incidence for the province of Ha Giang was at 26.95%, Thua Thien Hue at 6.42%, and Vinh Phuc at 4.93% (**Table 4-28**).

Table 4-28. Poverty Estimates by Region, 2010 and 2012

	GSO-WB Poverty Rate		MOLISA Poverty Rate		
	2010	2012	2010		2013
	Incidence (%)	Incidence (%)	Incidence (%)	% to total	Incidence (%)
Viet Nam	20.7	17.2	14.2	100	
Urban	6.0	5.4	6.9	14	
Rural	27.0	22.1	17.4	86	
Region					
North Central Coast (Thua Thien Hue)	28.4	21.2	24.0	20	6.42*
North Eastern Mountains (Ha Giang)	37.7	33.5	24.2	20	26.95*
Red River Delta (Vinh Phuc)	11.4	7.4	8.4	13	4.93*

*Figures for the respective provinces of Thua Hien Hue, Ha Giang, and Vinh Phuc only.

Source: World Bank, 2010 and PPTA Consultants

The average monthly income per capita in Vinh Phuc is the highest of the three Program provinces at VND 1.9 million (US\$ 89), followed by Hue at VND 1.7 million (US\$ 83), and Ha Giang at VND 850,000 (US\$ 40). Incomes of households in Vinh Phuc and Hue are mainly from formal employment in private and public organizations; whereas the Ha Giang population is largely dependent on agriculture, forestry, and fishery (**Table 4-29**).

Table 4-29. Monthly Income Per Capita per Province, 2012

Province	VND '000s		
	Ha Giang	Thua Thien Hue	Vinh Phuc
Total	850.3	1,747.1	1,866.8
Salary or Wage	273.7	833.7	783.5
Agriculture, Forestry and Fishery	440.4	220.5	373.3
Non-Agriculture, Forestry and Fishery	76.4	496.4	516.7
Others	59.8	196.5	193.4

Source: General Statistics Office (GSO), Viet Nam Household Living Standards Survey 2012

Ha Giang City

In 2013, Ha Giang Province had a poverty rate of 29.95%. Poverty is mostly concentrated in the mountainous districts. The province has achieved progress in lowering its poverty rate from 35% in 2011 to 29.95%, in 2013. In 2014, the poverty rate of Ha Giang City was 0.48%, and the percent of households under the close poor category was 1.59% (Ha Giang PC). Four out of the city's eight wards/communes have a high incidence of poverty—Quang Trung ward, and the three rural communes of Ngoc Duong, Phuong Do and Phuong Tien. Poverty rates in these areas ranged from 1.4% to 2.7% in 2013. The number of near-poor households has decreased overall—from 5.4% in 2011 to 2.5% in 2013, but still remained slightly higher in the four wards with the worst poverty in Phuong Tien commune.

Hue City

The poverty rate of the city in 2013 was 3.1%, which was significantly lower than the poverty rate for the province at 6.42%, and also lower than the national urban average of 3.9%. The wards with highest poverty rates were Huong So and Phu Hau, with around 7% poor households, and 6% to 10% near poor households. These high poverty rates are mainly because of the number of poor households relocated there from danger and hazard prone areas during the past years. In the Citadel area, the level of poverty is similar to the average of the whole city—about 3% to 4%. Nevertheless, pockets of poor households exist, especially in Phu Binh, Vy Da, and Kim Long wards.

Vinh Yen City

In 2012, the poverty rate of Vinh Yen City was 3.4%, significantly lower than that for Vinh Phuc Province at 25.1%, and the national urban poverty average of 3.9%. Poor households are mainly located in rural communes, comprising about 5.4% of the total population, or some 1,250 households. In 2012, the poverty rates in the city-center urban wards of Dong Da, Ngo Quyen, Tich Son and Lien Bao, were significantly lower—0.6% to 1.6%, than in Vinh Yen City as a whole. Dong Tam ward, Dinh Trung and Thanh Tru communes, located in the rural areas of the city, had higher poverty rates at 4.5%, 4.1% and 9.4%, respectively during the same year.

4.6.2 Gender Profile

There is almost an equal percentage of males and females in the three cities (**Table 4-30**). There is a slightly higher percentage of female population in Hue City (51.28%) and Ha Giang City (50.95%). In Vinh Yen, the percentage of women was 49.91% in 2014. The ratio of literate women for the three cities is high, ranging from 96% to 98%.

Table 4-30. Profiles of Ha Giang, Hue and Vinh Yen Cities, 2014

	Hue City	Vinh Yen City	Ha Giang City
Population	348,279	102,502	53,661
Number of Men	169,682 (48.72%)	52,207 (50.09%)	25,765 (49.05%)
Number of Women	178,597 (51.28%)	50,295(49.91%)	26,768 (50.95%)
Total number of Female headed HHs	n/a	6.6% (3,625 out of 23,951 households)	1,054
Female in labor force (from 15 to 55 years old)		48.77% (16,957 females out of 34,767 persons)	49.9% (16,594 females our of 33,220 persons)
Percentage of females in city government leadership	10% (5 out of 43 leaders)	31% (23 out of 74 leaders)	6.39%
Percentage of females in commune leadership	25% (84 out of 331 leaders)	19.1% (17 out of 89 leaders)	n/a
Migrated females in 2013		2.32% (456 out of 19,683 people)	51.66% (436 out of 844 cases)
Ratio of literate women	98%	98%	96%

Source: PPTA Consultants

Ha Giang City

There are 13,285 women who are 18 years of age and above in the city, and some 1,054 women-headed households, of whom 26 are considered poor. The number of women working as staff and officers in the city and commune people's committees represent about 71% of the total of 1,462. At the city level, the percentage of female staff members is high, some 76%, while at the commune level—the commune peoples' committees, Fatherland Front, Women's Union, and Youth Union—female staff account for 36% of the total. (Table 4-31)

Table 4-31. Staffing Profile of Ha Giang City, City and Commune Levels, 2015.

Department/Agency	Number of staff				
	Female	Male	Total	% women	% women leaders
I City Level					
DOLISA	5	3	8	63%	33% (1 out of 3)
DONRE	10	18	28	36%	
Women's Union (City Division)	6	0	6	100%	100%
City Administration	21	10	31	68%	
Fatherland Front	3	4	7	43%	25% (1 out of 4)
Youth Union	5	1	6	83%	67% (2 out of 3)
PMU	6	3	9	67%	33% (1 out of 3)
Water Supply and Drainage Joint Stock Company	39	71	110	35%	75% (3 out of 4)
Education Department (Teachers)	869	201	1070	81%	
Subtotal	964	311	1275	76%	
II Commune Level	68	119	187	36%	
Total	1032	430	1462	71%	

Source: Department of Domestic Affairs and Section of Labor, Invalids, and Social Affairs, CPC Ha Giang, August 2015

Vinh Yen City

In 2015, the female labor force participation rate of the city is 48.77%. The percentage of women leaders, at the city level is 31%, while at the commune level it is 19%. About 6.6% or 3,625 households are headed by women. Of the total migrants in 2014, about 2.32% are women. Table 4-32 shows the detailed staffing at the city and commune levels, by gender.

Table 4-32. Staffing Profile of Vinh Yen City, City and Commune Levels, 2015.

Department/Agency	Number of staff				
	Female	Male	Total	% women	% women leaders
I City Level					
City leaders for Population Council and City People Committees	23	51	74	31.3	31.3%
City government staff	66	83	149	44%	-
Leaders of Population Council and CPC	1	5	6	16.7%	16.7%
Administration Unit of CPC AND Population council	6	7	13	46%	50%
Section for Domestic Affairs	6	2	8	75%	50%
Planning and Financial Unit	7	1	8	87%	100%
Urban Management Unit	3	9	12	25%	8%
Inspection Unit	0	5	5	0	0
Justice Unit	2	3	5	40%	66.6%
Economics Unit	1	4	5	20%	0
Education Unit (not including teachers)	5	2	7	71%	66.6%

Department/Agency		Number of staff				
		Female	Male	Total	% women	% women leaders
	DOLISA	6	4	10	60%	50%
	DONRE	9	9	18	50%	11%
	Cultural and Informatics Unit	3	3	6	50%	50%
	Health Unit	1	2	3	33.3%	0
	Other Units/Branches ^{1/}	26	36	62	41%	33%
	Women's Union	7	0	7	100%	100%
	Fatherland Front	4	3	7	57.1%	33.3%
	Youth Union	7	2	9	77.7%	66.6%
	PMU	4	14	18	22%	5%
	Health Center	1	2	3	33%	0
	Subtotal	188	247	435	43.22%	35.15%
II	Commune Level					
	Leadership	17	72	89	19.1%	19.1%
	Staff	57	132	189	30%	-
	Subtotal	74	204	278	26.6%	
	Total	262	451	713	36.75%	

Source: Department of Domestic Affairs and Section of Labor, Invalids, and Social Affairs, CPC Vinh Yen, August 2015

1/ City Television and Radio Broadcasting Extension Center; Center for Population and Family Planning; and Security Safe Guard Team

Hue City

The female labor force participation rate of the city currently is at 49%. About 60.32% of the staff and officers in the city and commune people's committees are women. Some 23.46% are women holding leadership roles at the city government level, while 25% are women leaders at the commune level (**Table 4-33**).

Table 4-33. Staffing Profile of Hue City, City and Commune Levels, 2015.

Department/Agency		Number of staff				
		Female	Male	Total	% women	% women leaders
I	City Level					
	All Units of CPC	57	126	183	31,14%	10.4% (5/48 leaders)
	Education Branch ^{1/}	2,863	625	3,488	82.08%	67% (141/210 leaders)
	Other Units/Branches ^{2/}	136	329	465	29%	4% (6/138 leaders)
	DOLISA at city level ^{3/}	7	7	14	50%	0
	Women's Union (City Division)	6	0	6	100%	3 (100%)
	Elderly Association	2	1	3	67%	33% (1/3)
	PMU ^{3/}	1	6	7	14%	0%
	DPI	18	43	61	29%	20% (6/30 leaders)
	Water Supply and Drainage Joint-Stock Company	No info	No info	606		1 leader (0.17%)
	Urban Management Unit	3	22	25	13%	0
	Subtotal	3,093	1,159	4,858	63.67%	23.46%
II	COMMUNE LEVEL					
	Leadership	84	247	331	25%	25%
	Staff	137	168	305	44%	-

Department/Agency	Number of staff				
	Female	Male	Total	% women	% women leaders
Subtotal	221	415	636	34%	12.5%
TOTAL	3,314	1,574	5,494	60.32%	21.63%

Source: Domestic Affairs, CPC Hue, August 2015

Notes:

1/ Primary, secondary schools and kindergarten

2/ Center for Culture-Informatics-Sport, City Television and Radio Broadcasting, Extension Center, Center For Population and Family Planning, Security Safe Guard Team

4.6.3 Social Benefits and Impacts—Subprojects

Social benefits and impacts were assessed from a review of subproject proposals and feasibility studies prepared by the cities, through site visits, and initial consultations with the city and commune representatives. **Appendix 9** presents a more detailed table on the findings of the social assessment. For each major category of subproject, social benefits and impacts are summarised as **Table 4-34**.

Table 4-34. Potential Benefits, Negative Social Impacts and Risks per Subprojects Category

Subproject Category	Social Benefits	Negative Social Impacts/Risks
Drainage improvement and pavement works	<ul style="list-style-type: none"> Reduced flooding and improved drainage and sanitation conditions of nearby households 	Impact on properties—land and structures—and livelihood/small business—commercial establishments
Upgrading and expansion of roads and bridges	<ul style="list-style-type: none"> Improved mobility of people, goods and services 	Impact on properties—land and structures—and livelihood/small business—commercial establishments
Embankment improvements	<ul style="list-style-type: none"> Less riverbank erosion and more protection of residential properties Improved accessibility of pedestrians; Landscaped riverbanks are public open space and recreational areas 	Impact on properties—land and structures—and livelihood/small business—commercial establishments
Solid waste management facility/sanitary landfill	<ul style="list-style-type: none"> Improved health and sanitation conditions of nearby households 	Partial or full loss of assets and displacement—largely for waste pickers
Water system improvement	<ul style="list-style-type: none"> Increased access of household to clean water supply Indirect improvement in health and sanitation conditions in the households—decrease in water-borne diseases 	Water tariffs may not be affordable for poor households
Dredging and landscape protection, green park development	<ul style="list-style-type: none"> More open spaces for leisure and recreation Indirectly encourages tourism-related businesses and jobs 	<ul style="list-style-type: none"> Impact on properties—land and structures—and livelihood/small business—commercial establishments Destruction of fishing grounds,⁶⁵ and impact on deep wells in Dam Vac Lake⁶⁶ Restrictions on lake access for small-scale fishing for subsistence, and other water uses—washing, vegetable pickers of lotus and watercress, etc.

⁶⁵ Impact of the Dam Vac Lake dredging on the fishing grounds of residents. There are of two types of fish/crustaceans—local names: tep dau and trai—being harvested by locals for food in Thanh Tru commune.

⁶⁶ There are existing drill wells in Dam Vac Lake which are being used as a water source by the Water and Sanitation Company No. 1 for potable water supply.

Subproject Category	Social Benefits	Negative Social Impacts/Risks
		<ul style="list-style-type: none"> Possible encroachment and improper waste disposal within Dam Vac lake and green park areas
Wastewater collection and treatment and tertiary wastewater sewers	<ul style="list-style-type: none"> Improved sanitary conditions for residents; Reduced incidence of water-borne and vector-borne diseases 	Low interest and capacity of households to connect to the proposed wastewater collection system
Exhibition/linkage center for business support	New local enterprises established and additional employment opportunities created resulting in improved household incomes	Impact on properties—land and structures—and livelihood/small business—commercial establishments

Source: PPTA Consultants

Social Benefits

Improved access of households to basic urban services and infrastructure is one of the key benefits of the Program, which is in line with the main thrust of the GoV in achieving poverty reduction. Living conditions and the quality of life of the urban residents, especially the poor, will be improved. Local enterprises, especially those related to tourism and education services, will have the opportunity to grow, consequently bringing in additional employment and increasing household incomes. The Program will encourage citizen participation in preparation, implementation, and monitoring of subprojects. The participation of the mass organizations, especially the Women's Union (WU), in the information, education and communications (IEC) campaigns related to the Program will encourage more accountability in implementation.

Estimates of the number of households that will benefit and will be affected by the subprojects are shown as **Table 4-35**. This is based on the preliminary assessments prepared by the cities. The total number of beneficiaries for all subprojects in the three cities is 126,914 households; while the total number of adversely affected households, mostly because of resettlement, is 2,240 households. This is broken down as follows: (i) household beneficiaries in Ha Giang City are 14,600, in Hue, 87,000, and in Vinh Yen, 25,314; and (ii) there are 529 adversely affected households in Ha Giang, 769 in Hue, and 942 in Vinh Yen.

Table 4-35. Estimated Number of Beneficiaries and Affected Households per Subproject

Subprojects		Est. Target number of HHs beneficiaries/direct impact*	Est. Affected HHs*
I	HA GIANG CITY		
1	Drainage for Tran Phu and Nguyen Trai Wards	1,600	155
2	Drainage for Minh Khai Ward	1,000	21
3	Drainage of T1, T2, T3 and T4 in Quang Trung Ward	1,000	8
4	Western Embankment of Lo River	100	0
5	Embankment and Roads on each side of Mien River	100	160
6	Southern Embankment of Me Stream	20	39
7	Improvement of Existing Landfill	14,600	12
8	Upgrading of National Road No.2		35
9	Southern Ring Road Improvement		99
10	Bridge from National Road.No.2 to Southern Ring Road		0
	Subtotal	14,600 b/	529
II	VINH YEN CITY		
1	Dredging and Landscape Protection of Dam Vac Lake	5,000	55
2	Collection and Wastewater Treatment in West Vinh Yen	10,000	19
3	Tertiary Wastewater Sewers	10,800	120
4	Green Park Development near Dam Vac Lake	25,314	135

Subprojects		Est. Target number of HHs beneficiaries/direct impact*	Est. Affected HHs*
5	Infrastructure for University Area	6,000	613
6	Exhibition/Linkage Center for Business Support		105
Subtotal		25,314 c/	942
III	HUE CITY		
1	Dredging and Embankment of Ke Van River	1,000	80
2	Drainage and Pavements in Four Inner City Wards of Citadel	13,000	100
3	Dredging and Embankment of Lakes in Citadel	1,000	10
4	Water Supply System to Phu Son Solid Waste Management Facility and Villages	1,000	0
5	Dredging and Embankment of Lap River, Kim Long Ward	800	0
6	Eco-Channel of the An Van Duong Development Area	200	162
7	Dredging and Embankment of An Hoa River	800	0
8	Improvement of the Citadel Canal/Moat	500	0
9	Park, Paths, Drainage, and Lighting in An Van Duong Development Area	30,000	0
10	Park and Square in the Administrative Area, An Van Duong	30,000	0
11	Rehabilitation/Embankment of Dong Ba River	1,000	5
12	Rehabilitation/Embankment of An Cuu River	1,000	0
13	Rehabilitation/Embankment of Nhu Y River	1,000	37
14	Section of Central Road in An Van Duong Development Area including Bridge		375
15	Bui Thi Xuan Road		80
16	Huyen Tran Cong Chua Road		125
17	Vy Da Bridge and Access Roads		75
Subtotal		87,000 d/	769
TOTAL		126,914	2,240

a/ Only initial estimates based on review of draft project proposals, resettlement cost estimates, site visits, and consultations. For further validation during preparation of feasibility studies is necessary.

b/ Total household population in Ha Giang City.

c/ Total household population in Vinh Yen City

d/ Total household population in Hue City.

Source: PPTA Consultants

Potential Negative Social Impacts and Risks

The following significant, adverse social impacts and risks of the Program have been identified:

- *Land acquisition and resettlement.* The resettlement impacts vary from minimal to significant depending on the scope and type of subproject—partial or full loss of assets such as structures, land, and other improvements. There are certain gaps between the GoV's Land Law and ADB Resettlement policy which may pose more adverse impacts on the affected households, including (i) no compensation for land attached assets which have been illegally occupied; (ii) no specific measures for poor and vulnerable groups—women-headed households, persons with disabilities, and ethnic minorities; and (iii) no requirement to undertake a survey or census, or gender analysis related to resettlement impacts.
- *Low paying capacity of poor households for sewerage connections.* Particular to the tertiary waste water connection in Vinh Yen, the poor households may not be able to afford the connection fees.
- *Low level of involvement of mass organizations, especially women's union, in infrastructure-related subprojects.* The mass organizations—Fatherland Front, Women's Unions (WUs), Youth Unions, elderly associations, etc.—have little or no experience in the design, operations, and maintenance of green urban infrastructure and services.

- *Accessibility of women, elderly, children, persons with disabilities (PWDs), ethnic minorities, small-scale subsistence fishermen/vegetable pickers, and other vulnerable groups.* Local policies related to the design or preparation of infrastructure projects do not include provisions to ensure accessibility or address specific needs of some vulnerable sectors. There is a potential risk that the physical design or features of the proposed infrastructure do not meet the needs of some vulnerable groups, such as accessibility of persons with disabilities, access to the lake for small scale fishing or vegetable harvesting, separate toilets for men and women, among others.
- *Encroachment along drainage networks, river and lake embankments.* There is a possible risk of encroachment by residents or informal settlers after these are improved. In Dam Vac Lake, there is a potential risk that private businesses would encroach the lake area for large scale aquaculture or development for commercial uses.
- *Traffic, dust, noise and water pollution, groundwater contamination, safety risks, and other construction impacts.* The construction or rehabilitation of existing drainage networks, internal roads and new roads, and bridges, may result in traffic, dust, noise and other construction impacts which may vary from minimal to significant. Mobility, health and safety of the people, and operations and income of commercial establishments and other businesses will be affected.
- *Risk of communicable diseases/HIV AIDs.* There is a slow rise of HIV/AIDs cases in three cities, mostly attributed to infected needles through drug use and from sex workers.⁶⁷ There is a potential risk that HIV/AIDs and other communicable diseases may increase due to the influx of people to the cities, particularly laborers or construction workers, migrants from rural areas, and also tourists.

Gender Issues

In the design and implementation of urban infrastructure, gender considerations are not taken into account in feasibility study preparation or proposals, except for those funded by donor agencies. A rapid assessment on gender mainstreaming in the subprojects of the three cities has shown that there is little or no gender analysis—identification of gender issues, gender impacts—in the proposals or in the preparation of resettlement plans. Hence, there is little or no specific gender design features, targets or indicators in the design of the infrastructure subprojects⁶⁸, nor is there a gender action plan.

Gender issues to be addressed were identified through consultations and workshops with commune representatives; these were: (i) access of women to services and opportunities to be provided the Program; (ii) affordability of the services and the payment terms for loans among the poor women-headed households; and (iii) equal participation of women in the decision-making activities of the Program at the commune and city levels.

The women, being mainly responsible for household tasks, especially those related to sanitation, health, hygiene, should be consulted on appropriate design features needed for the tertiary wastewater connections. A concern on the capacity of the poor households, especially women-headed households without stable source of income, to pay for the wastewater connection was also raised. Although women participants do attend community meetings, there are generally more male leaders or officers at the commune, and also at the city levels who lead in the decision-making. Some women usually find it difficult to attend and contribute to community meetings due to household duties. More men are usually invited to be part of the community monitoring group which leads the monitoring of local infrastructure subprojects. Men are regarded to be more knowledgeable on the design and construction of small infrastructure subprojects, than women.

In general, the PMUs, WUs, and other key agencies to be involved in Program implementation require capacity building support on gender matters—basic principles, local legislation, ADB gender policies, and gender mainstreaming in subprojects.

⁶⁷ As of June 2015, the recorded cases of HIV/AIDs in three cities are as follows: 537 cases in Ha Giang, 506 cases in Hue, and 348 cases in Vinh Yen (Source: Center for HIV/AIDs Preventive Health Care).

⁶⁸ Rapid Survey on Capacity Assessment of Hue, Ha Giang, and Vinh Yen Cities on Gender Mainstreaming in Infrastructure Projects, SCDP TA Team, August 2015.

4.6.4 Mitigating Measures for Adverse Social and Gender Impacts

Social mitigation and gender action plans were prepared for each city—**Appendix 9** contains the detailed plans. These were drafted to address the potential negative social impacts and risks of the subprojects, and to achieve poverty reduction and gender targets under the Program. The critical activities and monitoring indicators proposed under the social and gender plans are summarised as **Table 4-36**.

Table 4-36. Summary Social Mitigation and Gender Action Plan for Ha Giang, Hue, and Vinh Yen Cities

Project Phase	Mitigating Measures/ Next Steps	Monitoring Indicators
I. Feasibility Study Stage	<ul style="list-style-type: none"> PMU to conduct regular consultations with affected communes—with at least 50% women participants Establish a Community Monitoring Group per affected Commune—at least 30% women members Establish the Dam Vac Lake Environmental Protection Committee, with at least 30% women members—Vinh Yen. 	<ul style="list-style-type: none"> Number of consultations conducted and number of men and women participants in the meetings Community Monitoring Group per commune established—at least 30% women members Issuance of City Resolution for the creation of the Dam Vac Lake Environmental Protection Committee (Vinh Yen)
	Preparation of Land Acquisition and Resettlement Plan (LARP)/ Compensation Plan to include (i) conduct of socioeconomic survey; (ii) conduct of detailed measurement and inventory of losses survey; (iii) community consultations; and (iv) gender assessment	<ul style="list-style-type: none"> Number of consultations conducted and number of men and women participants in the meetings LARP report with details of the livelihood support programs for affected households
	<ul style="list-style-type: none"> Preparation of Environmental Management Plan Preparation of detailed engineering designs incorporating measures to avoid identified construction impacts 	<ul style="list-style-type: none"> Number of consultations conducted related to engineering design solutions Detailed Environmental Management Plan Detailed engineering designs that mitigate negative impacts during construction
	<ul style="list-style-type: none"> Designation of Social and Gender Focal Person at PMU At least 20% of ODA/PMU staff are women 	<ul style="list-style-type: none"> List of capacity building activities for PMU and community partners—commune leaders, WUs, etc. Social and Gender Focal person assigned
	Prepare a feasibility study on the proposed loan fund for household sewer connections and sanitation to include (i) conduct of socioeconomic survey, (ii) willingness to pay survey, and (iii) consultations with communes and Women's Unions	<ul style="list-style-type: none"> Number of consultations conducted and number of men and women participants in the meetings Detailed feasibility study for the Loan Fund for Household Sanitation
II. Procurement and Detailed Engineering Design Stage	Consultations with representatives from Elderly Association, Youth Association, and PWDs groups on specific design requirements	Final detailed engineering design standards and performance indicators incorporating specific low impact design of facilities/amenities for men, women, elderly and PWDs in subprojects (refer to Table 4-37).
	Implementation of LARP/Compensation Plan and livelihood support programs	<ul style="list-style-type: none"> Number of HHs provided due and timely compensation Number of HHs provided with livelihood support Number of consultations conducted, with 50% women participants

Project Phase	Mitigating Measures/ Next Steps	Monitoring Indicators
	<ul style="list-style-type: none"> Update feasibility study for the loan fund for household sanitation with establishment of a savings group for poor households to improve loan payment capacities Establish savings group for poor households to improve loan payment capacities Conduct IEC activities on proper hygiene and sanitation practices 	<ul style="list-style-type: none"> List of eligible poor households for the loan fund program—number of men and women headed households Establishment of a savings group per commune—at least 30% women Number of IEC activities on sanitation and hygiene practices Number of men and women participants on IEC activities on sanitation and hygiene
III. Construction Stage	<p>Conduct capacity building activities on: Program planning, implementation, monitoring and evaluation tools/skills; gender equality policies and gender mainstreaming in subprojects; national and local safeguards policies on social and gender, environment, resettlement; household socioeconomic survey and census tools, resettlement and detailed measurement survey, willingness to pay survey; and loan and savings mechanisms for household wastewater connections/sanitation</p>	<ul style="list-style-type: none"> Number and types of capacity building activities conducted Number of training participants, with at least 50% women participants
	<ul style="list-style-type: none"> Implementation of Environmental Management Plan Regular monitoring of construction activities 	<ul style="list-style-type: none"> Number of site inspections conducted Number of meetings conducted with PMU, contractor, and community monitoring group Traffic rerouting schemes implemented Proper signage and barricades for safety installed
	<ul style="list-style-type: none"> Engagement of the Community Monitoring Group during construction Implementation of the Communications strategy, and Stakeholders Participation Plan 	<ul style="list-style-type: none"> Number/types of IEC materials and tools used to disseminate information on the Program Number of community meetings conducted Number of participants in meetings—at least 50% should be women Number and type of IEC materials and tools used to disseminate Program information Number and type of complaints and grievances recorded and resolved
IV. Operations and Maintenance Stage	<ul style="list-style-type: none"> Continuing activities of the community monitoring group, as necessary Quarterly or six monthly site inspections regarding encroachment Implementation of the Communications strategy and Stakeholders Participation Plan 	<ul style="list-style-type: none"> Number of site inspections conducted Number of meetings conducted with PMU, contractor, and community monitoring group Number and type of complaints and grievances recorded and resolved
	<p>Conduct IEC/awareness raising activities at commune level on:</p> <ul style="list-style-type: none"> 3Rs—reduce, reuse, recycle, waste segregation and disposal Proper sanitation and hygiene practices Climate change and disaster risk reduction Loan fund and savings mechanisms for household 	<ul style="list-style-type: none"> Number and types of IEC/awareness raising activities conducted Number of participants—at least 50% should be women About 50% of residents per concerned commune have attended the consultations after subproject construction

Project Phase	Mitigating Measures/ Next Steps	Monitoring Indicators
	sanitation	
	Continue activities under the resettlement plan, especially livelihood support programs	<ul style="list-style-type: none"> Number of HHs provided with livelihood support
	Implement loan program and savings program for household wastewater connections	<ul style="list-style-type: none"> Number of borrower beneficiaries—at least 30% should be women Number of savings groups established per commune—at least 30% should be women members

Source: PPTA Consultants

Design features to ensure accessibility and affordability of services

Further consultations with affected communes will be undertaken during subproject feasibility by national consultants. Low impact design features will be identified and incorporated in the detailed engineering plans to ensure vulnerable groups—women, children, elderly, and persons with disabilities—have access to or can afford the new services. **Table 4-38** summarises the required design features.

Table 4-37. Summary of Proposed Design Features for Subprojects

Proposed Design Features		
Ha Giang	Hue	Vinh Yen
<p>For roads, pavements, and river embankments:</p> <ul style="list-style-type: none"> Access ramps for disabled persons on river embankments and roads Separate toilets for men and women Landscaped areas with benches and tables Children's play areas Exercise areas for the elderly Lighting fixtures Small platforms or open areas for social activities and public performances <p>Wastewater improvements:</p> <ul style="list-style-type: none"> Feasibility study for a loan fund and savings program to finance household wastewater connections and improved sanitation 	<p>For roads, pavements, and river embankments:</p> <ul style="list-style-type: none"> Lighting fixtures Trees/landscaped areas Low-impact and green design of pavements and walking paths; design to follow existing street patterns of the Citadel Pavements with access ramps and tactile paving for disabled persons Parking spaces Proper street signage Separate toilets for men and women Open spaces for social and cultural activities, sports and recreation Access stairs along river embankments Areas for children's playground Chairs/benches 	<p>For Green and park developments:</p> <ul style="list-style-type: none"> Public taps for potable water Access ramps and pavements for disabled persons Separate toilets for men and women Chairs/benches Playgrounds for children Resting spaces and covered areas with chairs and benches Canteens and restaurants for tourists Kiosks for small enterprises—souvenir items, food items, etc. Open spaces for public performances, dancing, exercise and sex Vehicle and motorbike parking spaces <p>For Dam Vac Lake dredging and landscaping protection:</p> <ul style="list-style-type: none"> Preservation of breeding areas in Dam Vac Lake for indigenous fish and mollusc species Designate areas for recreational and subsistence fishing; restrictions on large scale commercial aquaculture activities and prevention of further encroachment Construction methods to avoid impact on fishing grounds and wells—for water supply source <p>For tertiary wastewater sewers:</p> <ul style="list-style-type: none"> Design features to avoid groundwater pollution, water logging, and emission of foul odors

Source: PPTA Consultants

Training or capacity building activities proposed for the PMU, DOLISA, community monitoring group, women's unions, Fatherland Front, youth unions, commune people's committees, and other partner organizations are set out below:

- Project planning, implementation, monitoring and evaluation tools and skills.
- Gender equality policies and gender mainstreaming in subprojects.
- IEC tools—planning, implementation, monitoring and evaluation, communication skills and public speaking skills.
- National and local safeguards policies on social and gender, environment, and resettlement.
- National and local procurement policies and procedures.
- Financial management procedures.
- Construction supervision and monitoring.
- Household data collection—household socioeconomic survey and census tools, resettlement or detailed measurement surveys and willingness to pay surveys.
- Climate change and disaster risk reduction.

Gender Action Plans

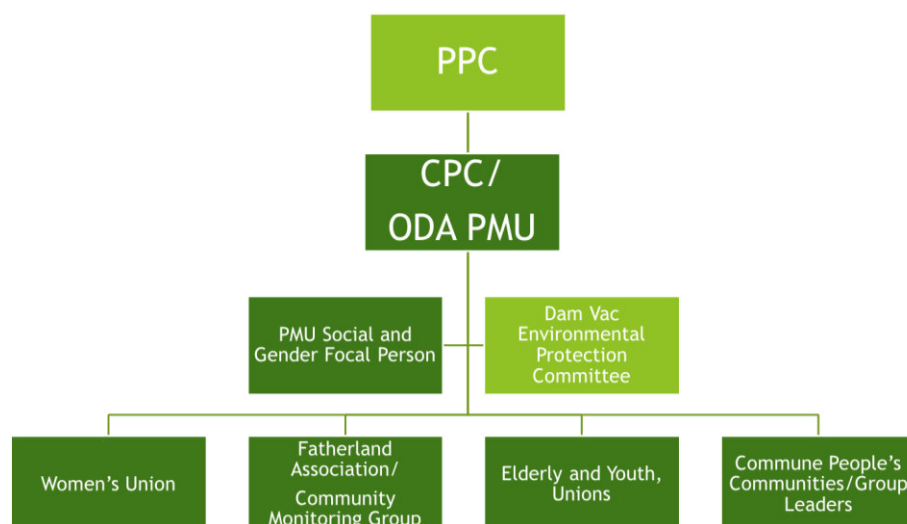
Gender Action Plans (GAP) were prepared for each city which outline the strategies to address the key gender concerns on the access to services and opportunities to be provided by the Program; affordable limits of the poor, especially women-headed households, and equal participation of women in the decision-making activities from planning to implementation of local infrastructure projects. Specific gender targets were also identified in the GAPs and include:

- Designation of social and gender focal person within the PMUs to supervise and monitor the implementation of the social and gender plans prepared under this Program.
- Assignment of at least 20% to 30% women as PMU staff—Ha Giang and Hue at 30%, Vinh Yen at 20%.
- Engagement of a national gender specialist who will provide technical advisory support to the PMU in integrating gender in the preparation and implementation of subprojects for each city.
- Integration of gender assessment, and finalization of gender action plans in the subsequent feasibility studies or subproject proposals.

4.6.5 Implementation Arrangements, Monitoring and Budget

The PMU will have a designated social and gender focal person who will supervise the preparation, implementation, monitoring and evaluation of social and gender plans. The implementation and monitoring of the social and gender plans will be in close collaboration with the commune people's committees, resident group leaders, WUs, Fatherland Front, elderly association, youth unions, community monitoring group, NGOs, and private sector groups. **Figure 4-12** outlines the proposed structure of the social and gender aspects and functions within the PMUs. An indicative total budget of US\$ 500,000 is programmed for the implementation of the activities detailed in the social mitigation and gender plans for the Program.

Figure 4-12 Proposed Implementation Arrangement for Social and Gender Plan



Source: PPTA Consultants

4.7 Financial Assessment

The financial analysis undertaken for the subprojects is in accordance with guidelines of the Asian Development Bank (ADB)⁶⁹ and the Socialist Republic of Viet Nam⁷⁰. All subprojects in the Program are considered non-revenue generating thus, the financial internal rate of return (FIRR) was not calculated. The tariffs collected for the revenue generating components—solid waste management, wastewater, water supply—currently do not fully cover costs for operation and maintenance (O&M), but are recommended to be adjusted over time to meet these requirements. Any funding gap for meeting full O&M costs will be covered by the executing agencies, which are the provincial governments of Ha Giang, Thua Thien Hue and Vinh Phuc.

Financial analysis was conducted for the three provincial governments covering the subproject sites to confirm the sustainability of the investments. The analysis focused on their capacity as end borrowers to service Program debts and to operate and maintain the subprojects. Details are shown as **Appendix 10**.

ADB loan funds will be channeled to the provincial governments of Ha Giang, Thua Thien Hue and Vinh Phuc through the Ministry of Finance. The provincial governments, have no direct financial benefit from the subprojects or from discharging its responsibilities as Program executing agencies. Thus, the financial analysis was conducted to ensure that their financial capacity will be adequate to meet its potential financial demands to achieve subproject sustainability.

4.7.1 Financial Sustainability Analysis – Ha Giang

Financial sustainability analyses were carried out by combining the costs of all ten subprojects which include drainage for Tran Phu and Nguyen Trai Wards; Minh Khai Ward; T1, T2, T3, T4 in Quang Trung Ward; embankment of Lo River, Mien River, Me stream; improvement of the National Road No.2, Southern Ring Road and Bridge; and landfill improvement. From the technical study, total subprojects' cost was estimated at VND 1,006 billion or \$45.74 million equivalent. Of this, VND93.0 billion will be on-lent by the MoF to the Province.

While the City Government of Ha Giang will be implementing the subprojects, the Provincial Government will provide needed funds for debt service and O&M after construction. The Provincial Government's

⁶⁹ ADB. 2005. *Financial Management and Analysis of Projects*. Manila; and ADB. 2009. *Financial Due Diligence: A Methodology Note*. Manila.

⁷⁰ *An Introduction to Financial Analysis of ADB-Financed Investment Projects in Viet Nam*. This document is downloadable from <http://www.adb.org/projects/operations/financial-management-resources>.

financial statements for the last four years (2011–2014) were reviewed to assess historical fiscal performance, capital structure, and generation of internal funds to support subproject implementation. A parallel analysis of the Province's borrowing capacity was undertaken to ensure that the loan amount is within its borrowing capacity—section 9.3 has the details. Projections were prepared to assess the Provincial Government's likely financial performance for a period of operations after commissioning.

Like all local governments in Viet Nam, Ha Giang Province has its own fiscal revenues to support its administrative functions. But it also receives annual budgetary subsidies from Central Government. Based on financial information provided, the overall fiscal income of Ha Giang includes domestic income, revenues from imports and exports, transfer payments from Central Government through tax-sharing arrangements, general transfers, and allocated funds. **Table 4-38** shows Ha Giang's fiscal and non-fiscal income during 2011–2014, and projections to 2030.

Analyzing historical trends and through discussions with local officials, a projection of possible operations for the next 13 years was undertaken, covering eight years after construction. The financial forecasts assume that revenues and expenditures after 2014 will increase at the average growth rate experienced from 2011 to 2014. Ha Giang has experienced robust economic development during the last decade. According to historical data, total revenue grew by about 22% from 2011 to 2014, while expenditures grew by 27% in the same period.

Table 4-38. Actual and Projected of Net Income of Ha Giang Provincial Government, 2010-2030 (VND million)

Items	2010	2011	2012	2013	2014	2015	2020	2025	2030
						-Projection----->>			
Total Revenues	17,021,408	8,001,601	9,960,338	9,621,743	9,779,494	10,193,537	12,550,200	15,806,918	20,172,231
Domestic revenues	8,001,601	589,387	746,705	896,954	1,084,022	1,374,000	1,825,000	2,939,181	4,733,580
% Annual Increase	-	-	26.7%	20.1%	20.9%	26.8%	9.9%	10.0%	10.0%
Revenues from Import-Export	4,222,873	531,495	367,481	256,365	181,512	180,000	220,200	255,272	295,930
% Annual Increase	-	-	-30.9%	-30.2%	-29.2%	-0.8%	3.0%	3.0%	3.0%
Income from resource transference	4,007,195	665,899	944,059	418,117	368,569	536,645			
% Annual Increase	-	-	41.8%	-55.7%	-11.9%				
Other Revenues	789,739	6,214,820	7,902,093	8,050,307	8,145,391	8,102,892	10,505,000	12,612,465	15,142,721
% Annual Increase	-	-	27.1%	1.9%	1.2%	-0.5%	1.6%	3.7%	3.7%
Total Expenditures	11,822,655	7,374,206	9,569,697	9,328,728	9,391,404	10,074,327	12,543,570	15,748,413	19,930,602
Capital Expenditures	3,182,577	1,906,633	2,983,455	2,262,457	2,123,791	2,675,568	4,504,894	6,318,347	8,861,808
% Annual Increase	-	-	56.5%	-24.2%	-6.1%	26.0%	10.0%	7.0%	7.0%
Loan Repayment	217,860	152,318	51,465	70,250	107,830	151,000	30,000	30,000	30,000
Recurrent expenditures	2,590,715	4,027,954	5,713,311	6,110,836	6,450,452	6,816,559	7,827,176	9,218,566	10,857,294
% Annual Increase	-	-	41.8%	7.0%	5.6%	5.7%	-0.8%	3.3%	3.3%
Expenditures from resource transference	5,443,568	944,059	418,117	368,569	535,601	250,000			
Other expenses	387,935	343,242	403,348	516,616	173,730	181,200	181,500	181,500	181,500
	17,021,408	8,001,601	9,960,338	9,621,743	9,779,494				
Surplus	5,198,753	627,395	390,641	293,015	388,090	119,210	6,630	58,506	241,629
% Surplus to Total Revenues		-	7.8%	3.9%	3.0%	4.0%	0.0%	0.3%	1.0%
% Annual Growth of Surplus		-	-38%	-25%	32%	-69%	-213%	42%	28%
Annual Average Growth Rate of Surplus						-20%	-185.26%	54.89%	

Source: Province of Ha Giang Financial Statements, 2011-2014.

If allocated funds and the proceeds of state subsidies are excluded, the government will still have available funds for Program purposes. By 2022, total revenues would be increased to VND13,744 billion, while projected expenditures would be VND13,726 billion. Annual funds required for O&M for all subprojects in 2023 are estimated to be VND11,755 million. This represents 0.5% of provincial domestic revenues, and 42.1% of surplus projected for this period.

The total subprojects' cost from all sources amounts to VND1,006 billion during the 2017–2022 construction period. Portion of the AFD loan will be provided to the province at 90% on-grant while the remaining 10% will be on-loan. Anticipated debt service obligations and operating expenses for 2023–2030 were calculated and included in the financial statements to determine the impact of the subprojects to the province's financial standing.

**Table 4-39. Estimated Financial Impact of the Program – Ha Giang
(VND million)**

Items	2023	2024	2025	2026	2027	2028	2029	2030
Total Revenues	14,392,684	15,079,417	15,806,918	16,578,229	17,396,656	18,265,796	19,189,567	20,172,231
Total Expenditures	14,364,746	15,038,281	15,748,413	16,497,351	17,287,450	18,121,216	19,001,319	19,930,602
Surplus	27,938	41,136	58,506	80,878	109,206	144,580	188,247	241,629
% Surplus to Total Revenues	0.1%	0.2%	0.3%	0.4%	0.5%	0.6%	0.8%	1.0%
% Annual Growth of Surplus	54%	47%	42%	38%	35%	32%	30%	28%
Impact Of Project								
Debt Service	7,022	6,918	6,815	6,712	6,609	6,505	6,402	6,299
Operation & Maintenance	11,755	11,755	11,755	11,755	11,755	11,755	11,755	11,755
Total	18,777	18,673	18,570	18,467	18,364	18,260	18,157	18,054
Surplus after Project	9,162	22,463	39,936	62,411	90,842	126,320	170,090	223,575
Debt Service /Domestic Revenue	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%
Debt Service /Surplus	25.1%	16.8%	11.6%	8.3%	6.1%	4.5%	3.4%	2.6%
Project O&M/Domestic Revenue	0.5%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.2%
Project O&M/Surplus	42.1%	28.6%	20.1%	14.5%	10.8%	8.1%	6.2%	4.9%

Source: PPTA Consultant's estimates.

Based on the above scenario, repayment is expected to be within the projected capacity of the province. Based on Ha Giang's projected income in 2023, the liability for the Program only amounts to 0.8% of domestic income. The position thereafter is expected to continue to improve with total debt service decreasing over time. (**Table 4-39**)

4.7.2 Financial Sustainability Analysis – Than Thien Hue

Financial sustainability analyses were carried out by combining the costs of all subprojects which include dredging and embankment improvements; parks, roads and bridge; and provision of water supply to the solid waste management facility and adjacent villages. From the technical study, total subproject cost was estimated at VND 2,231 billion or \$101.39 million equivalent. Of this, VND1,093 billion will be on-lent by the MoF to the Province. The Provincial Government will provide needed funds for debt service and O&M after construction. The Provincial Government's financial statements of the last four years (2011–2014) were reviewed to assess historical fiscal performance, capital structure, and generation of internal funds to support Program implementation. Projections were prepared to assess the provincial government's likely financial performance for a period of operations after commissioning.

Thua Thien Hue Province has its own fiscal revenues to support its administrative functions. But it also receives annual budgetary subsidies from Central Government. Based on financial information provided, the overall fiscal income of the province includes domestic income, revenues from imports and exports, transfer payments from Central Government through tax-sharing arrangements, general transfers, and allocated funds. Analyzing historical trends and through discussions with local officials, a projection of possible operations for the next 15 years was undertaken. The financial forecasts assume that revenues and expenditures after 2014 will increase at the average growth rate experienced from 2010 to 2014. **Table 4-40** shows the province's fiscal and non-fiscal income during 2011–2014, and a projection up to 2030.

Table 4-40. Actual and Projected of Net Income of Thua Thien Hue Provincial Government 2011–2030 (VND million)

Items	2011	2012	2013	2014	2015	2020	2025	2030
						<i>r e c a</i>		
Total Revenues	9,625,760	14,645,206	14,207,314	7,472,061	7,540,734	9,839,000	14,495,463	21,298,591
% Annual Increase	-	52.1%	-3.0%	-47.4%	0.9%	8.5%	8.0%	8.0%
Domestic revenues	3,159,757	3,885,296	3,728,136	3,768,636	4,118,445	6,755,000	9,250,778	12,651,651
% Annual Increase	-	23.0%	-4.0%	1.1%	9.3%	11.0%	11.0%	11.0%
Revenues from Import-Export	241,110	412,030	410,538	520,000	390,000	628,000	1,011,201	1,628,230
% Annual Increase	-	70.9%	-0.4%	26.7%	-25.0%	10.0%	10.0%	10.0%
Income from resource transference	1,361,560	1,748,784	2,768,402	-	-	-	-	-
Other Revenues	4,863,333	8,599,096	7,300,238	3,183,425	3,032,157	2,018,000	2,119,926	2,227,000
% Annual Increase	-	76.8%	-15.1%	-56.4%	-4.8%	1.1%	1.0%	1.0%
Total Expenditures	8,972,482	13,977,021	13,581,924	6,900,061	7,058,812	8,793,001	12,971,306	19,371,697
Capital Expenditures	2,078,755	3,030,434	1,983,926	1,448,400	1,466,900	901,000	1,018,727	1,151,837
% Annual Increase	-	45.8%	-34.5%	-27.0%	1.3%	2.6%	2.5%	2.5%
Loan Repayment	3,000.00	3,000.00	44,375	-	-	-	-	-
Recurrent expenditures	2,884,296	4,164,990	4,833,269	4,580,197	4,888,157	7,180,000	11,047,320	16,997,671
Expenditures from resource transference	1,762,634	2,740,685	2,181,345					
Other expenses	2,243,797	4,037,912	4,539,009	871,464	703,755	712,000	905,258	1,222,188
Surplus	653,278	668,185	625,390	572,000	481,922	1,045,999	1,524,157	1,926,894
% Surplus to Total Revenues	40.5%	6.8%	4.6%	4.4%	7.7%	10.4%	10.7%	9.4%
% Annual Growth of Surplus	-92%	2%	-6%	-9%	-16%	10.6%	6%	4%
Annual Average Growth Rate of Surplus					-24%	17.51%	7.84%	

Source: Province of Hue Financial Statements, 2011-2014.

If allocated funds and the proceeds of state subsidies are excluded, the government will still have available funds for Program purposes. By 2023, the first year of repayment of the ADB loan, annual debt service represents 0.9% of projected revenues, and 8.3% of its projected surplus. Annual funds required for O&M of the subprojects in 2023 are estimated to be VND17,013 million. This represents 0.1% of domestic revenues and 1.3% of surplus projected for the period.

The total project cost from all sources amounts to VND2,231 billion during the 2017–2022 construction period. 70% of the AFD loan will be provided to the province on-grant while the remaining 30% will be on-loan. Anticipated debt service obligations and operating expenses from 2023 to 2030 were calculated and included in the financial statements to determine the impact of the subprojects on the province's financial standing. (Table 4-41)

Table 4-41. Estimated Financial Impact of the Program—Thua Thien Hue (VND million)

Items	2023	2024	2025	2026	2027	2028	2029	2030
Total Revenues	12,427,523	13,421,725	14,495,463	15,655,100	16,907,508	18,260,109	19,720,918	21,298,591
Total Expenditures	11,071,038	11,981,677	12,971,306	14,046,907	15,216,088	16,487,131	17,869,058	19,371,697
Surplus	1,356,485	1,440,048	1,524,157	1,608,193	1,691,420	1,772,978	1,851,859	1,926,894
% Surplus to Total Revenues	11.1%	10.9%	10.7%	10.5%	10.3%	10.0%	9.7%	9.4%
% Annual Growth of Surplus	6%	6%	6%	6%	5%	5%	4%	4%
Annual Average Growth Rate of Surplus			7.84%					
Impact Of Project								
Debt Service	112,350	110,329	108,309	106,288	104,268	102,247	100,227	98,206
Operation & Maintenance	17,013	17,013	17,013	17,013	17,013	17,013	17,013	17,013
Total	129,363	127,342	125,322	123,301	121,281	119,260	117,240	115,219
Surplus after Project	1,227,122	1,312,706	1,398,836	1,484,892	1,570,140	1,653,718	1,734,620	1,811,675
Debt Service /Total Revenue	0.9%	0.8%	0.7%	0.7%	0.6%	0.6%	0.5%	0.5%
Debt Service /Surplus	8.3%	7.7%	7.1%	6.6%	6.2%	5.8%	5.4%	5.1%
Project O&M/Total Revenue	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Project O&M/Surplus	1.3%	1.2%	1.1%	1.1%	1.0%	1.0%	0.9%	0.9%

Source: PPTA Consultant's estimates.

Based on the above scenario, repayment is expected to be within the projected capacity of the province. Based on the projected income in 2023, the Program's liability amounts to 1.0% of domestic income and 9.6% of surplus. The position thereafter is expected to improve with total debt service declining over time.

4.7.3 Financial Sustainability Analysis—Vinh Phuc

Financial sustainability analyses were carried out by combining the costs of all subprojects which include principally wastewater management—collection, treatment and tertiary sewers; access road to the proposed University Village; dredging and landscape conservation of Van Dam Lake; a city park and construction of an exhibition linkage center for business support. Total subproject cost has been estimated to be VND 1,935 billion or \$97.94 million equivalent. Of this, VND1,188 billion will be on-lent by the MoF to the province. The Provincial Government of Vinh Phuc will provide needed funds for debt service and O&M after construction. The Provincial Government's financial statements of the last four years (2011–2014) were reviewed to assess historical fiscal performance, capital structure, and generation of internal funds to support Program implementation. Projections were prepared to assess the provincial government's likely financial performance for a period of operations after commissioning.

Vinh Phuc Province has its own fiscal revenues to support its administrative functions. But it also receives annual budgetary subsidies from Central Government. Based on financial information provided, the overall fiscal income of Vinh Phuc includes domestic income, revenues from import and export, transfer payments from Central Government through tax-sharing arrangements, general transfers, and allocated funds. **Table 4-42** shows Vinh Phuc's fiscal and non-fiscal income during 2011–2014, and projections to 2030.

Table 4-42. Actual and Projected Net Income of Vinh Phuc Provincial Government 2011–2030 (VND million)

Items	2010	2011	2012	2013	2014	2015	2020	2025	2030
						Forecast----->			
Total Revenues	19,866,615	23,153,182	18,234,900	19,761,183	20,999,852	21,990,000	26,601,435	30,980,508	36,207,645
Domestic revenues	10,846,808	11,257,365	9,780,104	15,659,006	17,769,620	19,200,000	22,798,000	25,921,963	29,473,996
% Annual Increase	-	3.8%	-13.1%	60.1%	13.5%	8.0%	2.5%	2.6%	2.6%
Revenues from Import-Export	4,222,873	4,846,007	3,058,652	3,014,330	2,905,879	2,790,000	3,685,000	4,926,857	6,587,223
% Annual Increase	-	14.8%	-36.9%	-1.4%	-3.6%	-4.0%	6.0%	6.0%	6.0%
Income from resource transference	4,007,195	5,543,569	-	-	-	-	-	-	-
Other Revenues	789,739	1,506,241	5,396,145	1,087,846	324,353	-	118,435	131,689	146,426
% Annual Increase	-	90.7%	258.3%	-79.8%	-70.2%	-	2.4%	2.1%	2.1%
Total Expenditures	11,822,655	14,258,657	14,550,206	15,098,992	17,212,468	12,243,674	16,243,786	23,115,264	33,356,731
Capital Expenditures	3,182,577	3,731,969	5,254,743	4,491,643	5,576,347	4,956,240	7,256,080	11,685,989	18,820,403
% Annual Increase	-	17.3%	40.8%	-14.5%	24.1%	-11.1%	10.0%	10.0%	10.0%
Loan Repayment	217,860	19,900	22,500	-	-	-	-	-	-
Recurrent expenditures	2,590,715	3,437,501	4,392,802	4,678,453	5,640,437	6,522,250	8,270,305	10,555,239	13,471,457
% Annual Increase	-	32.7%	27.8%	6.5%	20.6%	15.6%	5.0%	5.0%	5.0%
Expenditures from resource transference	5,443,568	6,388,658	4,103,333	5,201,284	3,120,292	-	-	-	-
Other expenses	387,935	680,629	776,827	727,612	2,875,392	765,184	717,401	874,036	1,064,871
		75.4%	14.1%	-6.3%	295.2%	-73.4%	3.9%	-	-
Surplus	8,043,960	8,894,525	3,684,695	4,662,191	3,787,384	9,746,326	10,357,649	7,865,244	2,850,914
% Surplus to Total Revenues	-	40.5%	38.4%	20.2%	23.6%	18.0%	41.3%	28.4%	11.7%
% Annual Growth of Surplus	-	11%	-59%	27%	-19%	157%	-3%	-8%	-31%
Annual Average Growth Rate of Surplus	-	-	-	-	-	23%	1.46%	-	-

Source: Province of Hue Financial Statements, 2011-2014.

Analyzing historical trends and through discussions with local officials, a projection of possible operations for the next 15 years was undertaken. The financial forecasts assume that revenues and expenditures after 2014 will increase at the average growth rate experienced from 2010 to 2014.

If allocated funds and the proceeds of state subsidies are excluded, the government will still have available funds for Program purposes. By 2023, the first year of repayment of the ADB loan, annual debt service would represent 0.4% of projected revenues, and 1.4% of its projected surplus. Annual funds required for O&M of the subprojects in 2023 are estimated at VND 24,831 million. This represents 0.1% of provincial revenues and 0.3% of surplus projected for this period.

Anticipated debt service obligations and operating expenses for 2023–2030 were calculated and included in the financial statements to determine the impact of the subprojects on the province's financial standing (Table 4-43).

Table 4-43. Estimated Financial Impact of the Program—Vinh Phuc (VND million)

Items	2023	2024	2025	2026	2027	2028	2029	2030
	Forecast----->							
Total Revenues	29,136,753	30,042,424	30,980,508	31,952,381	32,959,481	34,003,321	35,085,487	36,207,645
Total Expenditures	20,039,403	21,516,422	23,115,264	24,846,838	26,723,079	28,757,049	30,963,047	33,356,731
Surplus	9,097,350	8,526,002	7,865,244	7,105,542	6,236,402	5,246,272	4,122,440	2,850,914
% Surplus to Total Revenues	33.9%	31.2%	28.4%	25.4%	22.2%	18.9%	15.4%	11.7%
% Annual Growth of Surplus	-5%	-6%	-8%	-10%	-12%	-16%	-21%	-31%
Annual Average Growth Rate of Surplus	-	-	-	-	-	-	-	-
Impact Of Project								
Debt Service	123,600	121,423	119,246	117,068	114,891	112,714	110,537	108,359
Operation & Maintenance	24,831	24,831	24,831	24,831	24,831	24,831	24,831	24,831
Total	148,431	146,254	144,077	141,899	139,722	137,545	135,368	133,190
Surplus after Project	8,948,919	8,379,748	7,721,168	6,963,643	6,096,680	5,108,727	3,987,072	2,717,723
Debt Service /Total Revenue	0.4%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.3%
Debt Service /Surplus	1.4%	1.4%	1.5%	1.6%	1.8%	2.1%	2.7%	3.8%
Project O&M/Total Revenue	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Project O&M/Surplus	0.3%	0.3%	0.3%	0.3%	0.4%	0.5%	0.6%	0.9%

Source: PPTA Consultant's estimates.

Based on the above scenario, repayment is expected to be within the projected capacity of the province. According to Vinh Phuc's projected income in 2023, the Program liability amounts to 0.5% of domestic income and 1.7% of surplus. The position thereafter is expected to continue to improve with total debt service declining over time.

4.7.4 Subproject Feasibility Studies

The respective PMUs, with the support of their consultants, had prepared feasibility studies for the subprojects. These were reviewed, and no detailed financial assessments were undertaken for them, whether revenue generating or not. The PPTA team held discussions with the PMUs and their local consultants to facilitate the preparation of financial sustainability analyses that are appropriate for revenue and non-revenue generating subprojects. A series of workshops were held to demonstrate to the PMU and local consultants, how to conduct the financial and economic analysis using the standard guidelines of ADB and GoV. The projections of financial revenues and expenditures were part of these discussions and training. In turn, these projections were used in the financial sustainability and fiscal analysis of the individual provincial governments.

4.8 Subproject Economic Assessment

Economic analysis was undertaken by the PMUs as part of the feasibility study for proposed subprojects with the support of local consultants engaged by the cities and the PPTA Consultants. Decision 48/2008/QĐ-TTg on "*Issuance of Common General Guidelines on Feasibility Study preparation for Official Development Assistance (ODA) Projects*" provides the basis for these feasibility studies, including the principles that must be followed by development partners and project owners for the preparation of economic analysis. However, it does not provide the specific methodologies for how to apply these basic principles. In the absence of detailed GoV regulations for conducting economic analysis, the PPTA Consultants worked closely with the PMUs and their local consultants, adhering to the following ADB guidelines—*Guidelines for the Economic Analysis of Projects (1997)*, and *Key Areas of Economic Analysis (2007)*.

4.8.1 Derivation of Economic Costs

The estimated costs were valued at their economic prices using the *domestic price numeraire*. This methodology adjusts border price equivalent values to their equivalent domestic price levels and applies shadow price adjustments to convert economic costs to their economic equivalents. The prices of tradable components were adjusted to economic prices using a shadow exchange rate factor of 1.08. The nontradeable components were valued at domestic market prices. The shadow wage rate factors applied were 0.97 for skilled labor and 0.70 for unskilled labor. The economic costs were converted from preliminary engineering designs and estimates. Capital and recurrent costs, inclusive of 10% physical contingencies, in constant 2015 prices, were converted into economic costs by subtracting all transfer payments, including taxes and duties, before applying the appropriate conversion factors. The analysis took into account subproject life-cycle costs, which associate not only capital costs required for the investment but also maintenance costs throughout the evaluation period.

4.8.2 Benefits Estimation

Benefit Estimation of Ha Giang Subprojects

Ha Giang had 10 proposed subprojects which were grouped into the following for the economic analysis: (i) flood protection and drainage; (ii) solid waste management, and (iii) construction and/or upgrading of urban roads. For the city of Ha Giang, the PPTA consultants worked with the PMU and their local consultants to ensure that the relevant ADB guidelines and the co-benefits approach were applied to the benefit estimation.

For the flood protection and drainage subprojects, the benefit valuation focused on savings from reduced physical damages to the flood prone areas, and from the reduced agricultural production and income losses. The co-benefit approach further extended the analysis of the benefits to the economy and equity such as increased tourism benefits and improvements in public health and labor productivity as a result of reduced water and ground pollution.

For the improvements to the landfill, the benefit valuation focused on the improvements in public health and labor productivity as a result of reduced ground and outdoor pollution, and increased attractiveness of the city as a result of improved solid waste management.

For the construction and/or upgrading of urban roads, the benefit valuation quantified the savings generated in vehicle operating costs or the increase in income resulting from increased asset values of the affected properties. Using the co-benefits approach expanded the analysis to include the benefits from business expansion or relocation to the areas traversed by the upgraded road.

Benefit Estimation of Hue Subprojects

Hue had 17 proposed subprojects which were grouped as follows for the economic analysis: (i) drainage and embankments, (ii) flood protection and drainage; (iii) water supply for a solid waste management facility, and (iv) construction and/or upgrading of urban roads.

The drainage and embankment subprojects will reduce environmental pollution, improve the flow capacity of rivers, and uplift the living conditions of people along them. However, it will not significantly improve flood protection. The benefit valuation for the subproject focused on measuring the improved public health as a result of the reduced environmental pollution. This was done in terms of cost per disability-adjusted life-year (DALY) avoided or cost per case of diarrheal disease averted. Using the co-benefits approach meant considering the following additional benefits: (i) reduced impact on labor productivity from workers suffering from ill health; (ii) increased income from businesses relocating or expanding in Hue as a result of improved city attractiveness; and (iii) higher household incomes or wealth due to increase in asset values of the affected properties.

The flood protection and drainage subprojects will improve drainage and reduce flooding in some parts of the Citadel. The benefit valuation focused on savings from reduced physical damages to the flood prone areas, as well as from the reduced agricultural production and income losses. The co-benefits approach also considered the following: (i) increased tourism benefits. (ii) improved public health derived from the shift to a healthier, lower-carbon lifestyle encouraged by improved landscaping and lighting in the Citadel; and (iii) time savings due to improved flood alleviation and management in the affected areas.

The proposed water supply for the solid waste treatment subproject is deemed essential to respond to the growing solid waste treatment demand of the city and its neighboring areas. The benefits considered included increased tourism benefits, improvements in public health and labor productivity as a result of reduced ground and outdoor pollution, and increased attractiveness and cleanliness of the city as a result of improved solid waste management.

For the construction and/or upgrading of urban roads, the benefit valuation quantified the savings generated in vehicle operating costs and the increase in income resulting from increased asset values of the affected properties. Using the co-benefits approach meant considering the benefits from business expansion or relocation to the areas crossed by the new road and other benefits derived from the improved connectivity of the new urban areas to the rest of the city.

Benefit Estimation of Vinh Yen Subprojects

Vinh Yen had six proposed subprojects which they grouped into the following for the economic analysis: (i) drainage, landscaping and green park development; (ii) basic infrastructure for the university village; (iii) wastewater management; and (iv) linkage center for supporting green and low carbon industrial production. In undertaking the economic analysis, the PPTA consultants worked with the city of Vinh Yen and their local consultants to ensure that the relevant ADB guidelines as well as the co-benefits approach were applied.

For the drainage, landscaping and green park development subprojects, the benefit valuation focused on savings from improvements in public health derived from the shift to a healthier, lower-carbon lifestyle encouraged by the park and increased tourism benefits. For the arterial road to the university village, the major benefits considered the increased income from businesses, particularly educational institutions relocating or expanding in the area, and the improved eco-tourism benefiting the villages inside the proposed university area.

For the wastewater management subprojects, the benefit valuation quantified the improvements in public health as a result of the reduced water and ground pollution. Using the co-benefits approach considered the following additional benefits: (i) reduced impact on labor productivity from workers suffering from ill health; (ii) time savings related to access of sanitary facilities; and (iii) increased household income or wealth because of increase in asset values within the communities affected.

For the linkage center to support low-carbon industrial production, the benefit valuation focused on the increase in income as a result of the operations of the business incubator for green technology industries. The use of the co-benefit approach also considered the following additional benefits: (i) increased household income or wealth due to increase in asset values in the properties affected by the development; (ii) improvements in public health because of reduced levels of pollution or emission levels, and (iii) improved well-being of residents resulting from the promotion and shift to a greener, low-carbon lifestyle.

4.8.3 EIRR Calculations and Sensitivity Analysis

The base-case results indicated that all subprojects are economically viable with an estimated economic internal rate of return exceeding the assumed economic opportunity cost of capital of 12%. Results ranged from 14.76% to 28.48%. All subprojects were generally viable under adverse scenarios in which costs were higher or benefits lower by 10% than the base case. A sensitivity analysis, undertaken to further test the economic viability of the subproject, ascertained the consequences of changes in the following variables: (i) 10% increase in investment cost possibly arising from a delayed implementation schedule or higher than expected inflation; (ii) 10% increase in operations and maintenance costs which can be attributed to higher-than-budgeted personnel salaries; (iii) 10% decline in benefits possibly resulting from lower-than-projected tourist arrivals and spending; (iv) a combination of scenarios (i), (ii), and (iii); and (v) a delay in subproject benefits by a year. The detailed economic analysis for the subprojects is in **Appendix 11**.

PROGRAM CONTEXT

PROGRAM ASSESSMENT

THE PROGRAM

5 Program Technical Assessments

This chapter summarises the program technical assessments undertaken by the PPTA team. Important elements of these analyses will enable the Program to achieve its development results. The chapter starts with an assessment of the urban planning system. Proposals to change the way in how government undertakes its technical assessments of subprojects to incorporate green infrastructure and low impact development follow. Program poverty reduction, gender and social impacts are next while the chapter is completed with an assessments of the financial and economic analyses included in feasibility studies. Summaries of the gaps between how government undertakes its assessments, and how ADB normally evaluates them are contained here where relevant.

5.1 Urban Planning

Planning is structured horizontally—linking ministries, agencies and departments—and vertically—across government from national to provincial to city or district. The organisation of provinces and cities or districts follows that of the main, national line ministries, with departments reporting to their corresponding ministries and provincial authorities. Provincial authorities are the People’s Councils—the local legislature—and People’s Committees—the local executive. Accordingly, each planning entity reports within a ministry at national level or a department at province level, and to the executive within its own level of own government—national, provincial, city or district. Another layer of reporting is between the government and the Communist Party. Provinces are in charge of social and physical infrastructure—transport, roads, drainage, water supply, solid and liquid waste management, health, and education, etc. Cities and districts implement smaller and more local interventions.

Three types of plans are prepared that relate to urban development:

- Socio-economic and development plans.
- Sector plans.
- Physical plans—spatial, construction or master plans.

Appendix 12 presents a detailed background to the planning system, outlines its problems, and the causes and effects of these, and contains recommendations for improvement.

5.1.1 Problems of the Planning System

Development in Viet Nam is taking place under market mechanisms, and is often in conflict with the urban planning system that is based on administratively determined objectives and targets, which often differ from what is happening on the ground, despite revisions and addition of relevant laws. Plans are poorly coordinated, particularly at the city level. City growth is inadequately managed. National policy now recognizes the economic contribution of cities, and the realities of the market, but there still is a disconnect between socio-economic and physical master planning. Problems of coordinating the outputs of many plans produced by ministries and agencies involved in urban development—socio-economic, land use, industrial development, environmental protection, transportation, climate change, green development, housing and utilities—are commonplace. And these are compounded by major new urban developments, which are not envisaged in the plans, and often by illegal construction and land encroachment. Planning is not participatory, and a more open and effective system is needed to incorporate public-private partnerships, and encourage the involvement of citizens and civil society.

The master planning process is based on detailed physical designs rather than providing a spatial framework for socio-economic development and responding to such trends. Spatial plans are prescriptive with an emphasis on physical aspects—creating cities by design—and on permitted land uses—often at ward or project level—without considering underlying socio-economic needs or market realities.

These problems and issues have been identified in a diagnostic assessment of the urban planning system undertaken under by the PPTA team. The core problem of the planning system is seen to be inefficient urban planning and environment management that stems from the multi-layered, uncoordinated, centralised, engineering-driven planning of secondary cities.

The causes of the core problem are:

- **A lack of strategic spatial and development planning.** Plans are prescriptive rather than guiding or enabling since the planning process remains heavily dependent on officially sanctioned targets, even after the introduction of Doi Moi, and the adoption of market mechanisms. Forecasts, especially of population, are made at national level and are often different from local reality. The master planning approach is not evidence based, and neither responds to real demand nor to market forces. The urban profile contained in a master plan is prepared from secondary, not primary data sources, or detailed surveys and analysis. The physical focus on planning can also negatively impact the implementation of locally relevant policies and practices. There is a lack of scenario planning and strategic analysis, which makes plans less dynamic and means they are focussed on engineering-based solutions through detailed but static land use/design plans. Strategic development initiatives supporting long term city visions are often lacking. Plans are inadequately monitored and revisions are too infrequent.
- **Centralised planning that fails to recognize local demand.** The planning system is relatively complex. The legacy of top-down command and control planning processes dominates and this limits the ability of the provinces and cities to address local issues. Quantitative data to monitor targets, production and other relevant statistical comparisons is highly valued, and often is protected. In some cases, the same data is collected by two or more government agencies to ensure they have access when needed. Data quality is an issue, with inconsistent and inaccurate databases. Non survey base data is used that does not adequately reflect local conditions, and limited urban sector diagnostic analyses undertaken. And there is a failure to recognize that market forces drive urban development. Despite the centralized nature of planning, mechanisms to establish an efficient urban hierarchy are weak, with inter-provincial planning systems not adequately addressing issues of coordination and competition for “trophy” projects, such as airports and ports.
- **The presence of multiple plans, weak coordination and a disconnect between the plans and budgets.** Responsibility for urban development, policy and planning falls under line ministries, provincial and city-level governments. Urban planning is decentralized horizontally and vertically with responsibilities across line ministries and provincial or city level departments, and across functional or spatial jurisdictions. Socio-economic development plans—under ministry/departments of investment planning; land use plans—under the ministry/departments of natural resources; urban master-plans—under the purview of ministry/departments of construction; transport and infrastructure plans—under the ministries/departments of transport and construction; and housing plans—under housing agencies within the ministry/departments of construction. A lack of coordination across hierarchies and among ministries and departments adds to the problems of urban planning—the planning system is fragmented and silo based. Often plans are not well coordinated with each other, or with the city administration. Functional fragmentation is a bottleneck of the planning process. And there has been a lack of coordination and cooperation between the public and the private sectors. This has fragmented decision-making and financial resources. Specialised agencies often prepare physical master plans for urban areas, there are poor linkages between land use and transport plans, and weak project identification and structuring is commonplace. There also is a disconnect between plans and budgets or financial resources to implement priority projects, often because of the weak local capacity in project identification, preparation and financial structuring.
- **Climate change adaptation (CCA), and disaster risk reduction and management (DRRM) measures are lacking in most plans.** Despite national climate change policy, which admittedly is quite general, city (master) plans generally do not take account of impacts of climate change. DRRM not institutionalised as a factor in the preparation of city master plans. There are few hazard maps and engineering designs often do not consider the impacts of climate change. Much of this stems from the lack of guidelines for incorporation of CCA and DRRM into master plans. Weak coordination, and understanding of risk and vulnerability, between agencies responsible for mainstreaming CCA, DRRM and city planning further hinders integration. The responsibility for DRRM is too divorced from that of urban development.
- **Weak participation of citizens, businesses and civil society in the planning process.** Participatory planning based on public involvement is not a common practice in Viet Nam, reducing the acceptability and usefulness of development plans. There are ineffective communication channels between government, citizens, civil society and business. Overall it appears that there is a

lack of political will to involve people, businesses and civil society. Too often there is a lack of engagement of poor and vulnerable groups in planning even for the areas where they live; thus leaving many without an adequate voice. The views of citizens, businesses and civil society often are not seriously considered, even if consultation does take place. This is a reflection of the centralised nature of the planning system

- **Poor implementation of plans, and enforcement of land use zoning and building regulations.** The recognition of private property came in the late 1980s and was formalized in 2003 under the Land Law, which clarified land use rights. The State continues to officially own land, but use-rights can be awarded to families or corporate entities. The transfer of land use rights and registration is a provincial responsibility and provides a major source of local revenue. Since the Land Law was enacted, major developments have been by state enterprises and those supported by private and foreign investment. Although many of these developments have local, internal—on site—infrastructure, and strategic infrastructure—off site, public services can be delayed. With rapid urban growth—over 3% per annum—the demand for land and housing is ahead of planning. There are no effective institutions, such as development corporations for implementing a coordinated program of investment in urban development. Many buildings, particularly those in suburban and peri-urban areas, do not have construction permits, leading to the illegal urbanization of former agricultural land. Planning and development decisions often are made on a case by case basis and may even be contrary to regulations. Much of this stems from the lack of a social contract between stakeholders where the rights of the public are not respected, and there is little opportunity for complaint. There is a genuine lack of consensus on the notion of public interest, with a lack of respect for compliance with regulations added to by claims of bribery and corruption, and compounded by the lack of political will to enforce regulations. Master plans are implemented by the Urban Management Division of the CPC through the issuance of construction permits. But they lack staff and skills to implement the regulations, and often are subjected to pressure from above.

Weak capacity in the core competencies of urban planning and enforcement underpin the above causes.

The implications of inefficient urban planning and environmental management mean that:

- There is uncontrolled development, particularly urban sprawl, linear growth and underserved peri-urban areas, extending built-up or influence areas of many secondary cities.
- Both inefficient and excessive infrastructure investment across provinces.
- Uncompetitive secondary cities that suffer from a lack of economic infrastructure and support services.
- Cities with environmental problems—air, water and ground pollution.
- Non-inclusive secondary cities, where poor areas are often raised for new development schemes, including infrastructure, and inhabitants are resettled elsewhere.
- Illegal construction and land encroachment, particularly on agricultural land on the boundaries of the built up areas of most cities.

In summary, many of the problems of urban planning stem from its centralized nature—an inheritance of planned economies. Systems to manage and provide incentives for positive outcomes from market operations are rarely incorporated. Public intervention through urban planning, and land use zoning and building regulations, land and housing policy, and infrastructure development can encourage development, but when they are non-responsive to the market, public infrastructure investment can take place where there is no or little demand. Since the Doi Moi reforms of 1986, Viet Nam is moving towards a market economy and a more open and participatory society. Urban planning must respond to this, and become more strategic in nature, where it guides rather than follows development, and incorporates mechanisms to manage the private sector development to achieve positive outcomes for the broader community.

5.1.2 Key Actions to Improve Urban Planning

Changes to the planning system cannot be made overnight, and a gradual shift to less prescriptive and more enabling, responsive and flexible approach is required. But this will take time. And the lack of a

major cadre of modern urban planners is a cause for concern. Strengthening urban planning will require extensive capacity development. Urban planning, rather than facilitating the functioning of land and housing markets, is still based on static design principles. The efficiency of the urban form and the benefits of long-term economic agglomeration will depend on the extent to which these deficiencies can be addressed.

Planning approaches and agencies need reform. This requires moving from static to dynamic plans, using better tools and data to monitor changes taking place in the land and housing markets, and improving the integration and effectiveness of planning agencies, and their coordination with implementing and enforcement agencies.

Specific recommendations are:

- **Introduce strategic planning and diagnostic assessments into the traditional master planning process.** It is essential to complement the master-planning approach with more frequent strategic planning updates, and adaptive management strategies based on current socio-economic data and market trends to complement and lead design oriented planning and development. This would facilitate better integration of overall planning with other planning processes—such as socio-economic development plans and land use plans. And it would follow the methodology and approach used in the preparation of the GrEEEn City Action Plans for Hue, Ha Giang and Vinh Yen, as well as the preparation typical city development strategy documents. Guidelines for strategic urban assessments too are needed, both at national and city levels. As a result of these structural challenges, and as a response to them, a revision of the Law on Urban Planning may be considered.
- **Ensure there is more demand-related and decentralised planning.** Government structures are hierarchical, allowing little or no independence in the content of plans and decisions at the local level. Furthermore, coordination across sectors, while mandatory, is restricted by the many hierarchies and reporting mechanisms across cities and districts. Rigid technical specifications and regulations, which tend to be the norm in Viet Nam for urban development, reduce flexibility and independence of city or district governments. Urban plans need to relate more to local demand and markets, and better diagnostic analysis of the local urban system is needed providing a basis for a national spatial hierarchy. Rigorous urban profiles need to be prepared and updated more frequently to enable decision makers to have access to the latest and most appropriate data. This needs to be complemented by greater accountability and performance management—obtaining the data is one thing, using it effectively to enable sustainable growth is another.
- **Strengthen coordination across line ministries—more spatial and sectoral integration.** Planning urban development requires better horizontal and vertical coordination across government. Urban development occurs across administrative divisions, while public policies often are designed and implemented for specific sectors or functions within defined administrative boundaries—provinces and cities or districts. Coordination is essential for services that cross administrative boundaries, such as public and road transport, regional and urban planning, water supply, and wastewater management, drainage and flood control, etc. Improved systems of governance are needed to ensure the more efficient delivery of services, where cities coordinate across provincial boundaries better. But in most cases cities are managed by the provinces. Better coordination can be achieved by reorienting urban master planning to cover the functional or influence areas of cities—across city, district or provincial boundaries. Extending city boundaries accordingly is a longer term solution. To ease the transition it may be possible to establish ad hoc planning bodies/companies covering adjoining administrative areas within the influence areas of a city or cluster of settlements. At the national level there needs to be a better focus for urban development, and this could be achieved by the creation, at ministerial level of an agency for urban development. This could be a Ministry of Urban Development or a specific coordinating body, upgrading the mandate of MOC agencies, which would assume key functions related to urban development. This agency would develop a new urban policy, which moves away from the strict design approach that is prevalent today to more policy, enabling and guiding approach of urban planning. The agency would also be tasked to integrate the processes of socio-economic development and environmental planning into that of urban master planning; thus producing more integration in the planning system.

- **Incorporate CCA and DRRM measures into city master plans and national legislation.** Climate change—adaptation versus mitigation, and disaster risk management—vulnerability and resilience are two separate but related areas. They need to be articulated in plans and policy. This would involve providing assistance to provinces and cities to support them in the definition of an Integrated Climate Change Action Plan, and support to mainstream climate change, disaster risk and vulnerability along with environmental issues into city master plans. It would also involve disseminating methodologies and lessons learnt to national government to enhance the implementation of the National Climate Change Action Plan and other relevant environmental legislation. There needs to be a *Climate Profile Manual* that would describe how to make an overall assessment of vulnerability, carbon footprint, and city governance and capacity. A *Detailed Matrix* that would identify priorities, strategic and quantifiable objectives to allow cities to follow a sustainable urban development path, by adapting to the consequences of climate change and significantly reducing GHG emissions. A *revised city master plan* would be needed to include an *integrated climate change action plan*—that would include an implementation plan, an investment plan, and a monitoring framework—an *air quality management plan*, and a *disaster risk reduction and management plan*. Guidelines of how to incorporate these into the preparation of master and other plans would also be needed.
- **Make urban planning more participatory.** This requires increasing citizens' and business involvement in urban planning, and would support the transition towards GrEEEn city action planning and the reparation of city development strategies, both of which require extensive consultation and participation. Specific support to planning for poor and vulnerable communities in respect of climate change resistance, disaster risk reduction and management, and sustainable livelihoods would also be important.
- **Improve capacity of staff to ensure better strategic and more integrated planning and diagnostic analysis and enable the better enforcement of land and building controls.** This requires the development of a program of capacity development, which would introduce strategic planning and diagnostic analysis to planning staff; provide training on how to prepare strategic urban assessments, GrEEEn city action plans and city development strategies; provide training on participatory approaches in urban planning; development of options for effective implementation of plans; and strengthen the monitoring system for the issuance of building permits and authorizing land use changes. Active encouragement too should be given to universities and technical institutes to increase the number and skills of planning graduates, and planning courses updated to include a focus on strategic planning and diagnostic analysis. The capacity development program should be also help city and provincial governments to strengthen their ability to enforce regulations more equitably, and reduce corruption in the approval processes.
- **Develop an operational policy framework and plan for secondary cities.** The OMP for Urban Development to Year 2020, approved in 1998, set national urban policy, which is largely spatial in emphasis. It proposes limiting the growth of Hanoi and HCMC and creating satellite cities around them, encouraging urban fringe growth, increasing population density in other cities and districts, creating new urban areas in remote provinces and planning rural development to preserve agricultural land. But it does not provide the basis for urban policy. There is no national policy that centers on cities or urban development in general, while at the national level urban development objectives are implicit within a number of related policies—industrialization, relocation of polluting industries, balancing investment and development among regions, for example. There are national programs on investment management of urban development, urban development itself, and a national program on upgrading of urban centers. Only the latter has an estimated cost—VND174 trillion but no details of this figure are given between regions or cities or types of investment required. An operational policy and plan is needed to implement the decrees of government on urban development. The policy framework and plan should combine a strategic urban assessment of Viet Nam with an action program and an investment plan from cost estimates that define an urban development program for say five years from now based on an effective hierarchy of urban centers—to 2020 for consistency with other program. The program would establish levels of investment needed to satisfy the urban vision and the objectives of the national program on urban upgrading and the national program on urban development. The program should consider actions and investments needed according to city grades, which would include sub-programs for secondary cities

development—grades II-IV; another for the major cities—special grade and grade I; and also one as a small towns program—for grade V towns.

5.1.3 Program Action Plan to Improve Urban Planning

To implement the key recommendations made above in relation to green growth of secondary cities, a program action plan for urban planning improvements has been prepared. This is shown as **Table 5-1**, elements of which have been incorporated in the overall program action plan to implement the Program.

Table 5-1. Summary Program Action Plan—Urban Planning

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Result Area 3—National green policy, support and oversight			
Urban Planning: Current urban plans are prescriptive not guiding, and adopt officially sanctioned targets. The system is complex, and involves centralised planning that fails to recognise local demand. Responsibility for urban development, policy and planning falls under various line ministries, provincial and city level governments, producing multiple plans. Coordination is weak, and plans and budgets are not linked. Measures for climate change adaptation (CCA) and disaster risk reduction and management (DRRM) are lacking in most plans. There is weak involvement of citizens, businesses and civil society in plan preparation. Implementation is weak—land use zoning and building regulations are haphazardly enforced.	<ul style="list-style-type: none"> Ministry of Construction, within the context of the Law on Urban Planning,⁷¹ prepare additional articles and revisions to Government Decree # 37/2010/ND-CP, on the Formulation, Evaluation, Approval and Management of Urban Planning⁷², and Ministry of Construction, Circular No.10/2010/TT-BXD, Defining Records of Each Urban Planning. This would involve new provisions and the preparation of guidelines for strategic, demand-led and decentralised GrEEEn city action planning; for CCA and DRRM measures; for increased public participation over that prescribed in Article 43 of the Land Law⁷³; to prescribe planning for city functional areas that cross provincial, city or district boundaries; and for better integration of multiple plans. 	MOC	2016-2017
	<ul style="list-style-type: none"> Design and implement a program of capacity building for provincial and city staff to ensure improved knowledge on strategic, GrEEEn, and integrated planning and diagnostic analysis, and to enable the better enforcement of land use and building approvals. 	PPCs and CPCs with the support of TA consultants	2016-2020
To implement the national program on urban development, an operational policy and plan is required. Policies and plans for GrEEEn city development within the context of a secondary cities development program are lacking	<ul style="list-style-type: none"> Develop an operation policy framework and investment plan for GrEEEn development of secondary cities—grades I to III. Focus to be on Ha Giang, Vinh Phuc and Thua Thien Hue provinces. 	DOC and DPI	2016-2017

Source: PPTA Consultants

⁷¹ Law number 32/2009/QH12. June 17, 2009. 5th Session of the XIIth National Assembly.

⁷² Article 16, Contents of a general plan of a provincial city or town.

⁷³ Law number 45/2013/QH13. November 29, 2013. 6th Session of XIIIth National Assembly.

5.2 Feasibility Study Technical Assessment

5.2.1 Background

In April 2013 the Government of Viet Nam (GOV) promulgated a decree on the management and use of official development assistance (ODA) and concessional loans of donors (Degree #38). This Decree provides management guidelines on the use of ODA and concessional loans of foreign governments, international organizations and inter-state or inter-governmental organizations—referred to as donors.

The GoV has identified the following priority areas for ODA and concessional loans:

- Construction of large scale and modern economic infrastructure, including transport infrastructure—roads, railways, airports, seaports and internal waterways; urban infrastructure—urban traffic, water supply and drainage, urban environment hygiene, urban power infrastructure; communication and technological infrastructure; energy infrastructure—prioritizing the development of renewable energy and new energy; and irrigation infrastructure and dykes.
- Development of social infrastructure, including culture, health, education and training, vocational training, social security, poverty reduction, population and development.
- Development of hi-tech and science, source technology and the science and technology development in some prioritized, concentrated domains, economic knowledge and human resource with high quality.
- Development of agriculture and rural areas, including the restructuring and development of the agricultural economy, rural socio-economic infrastructure, and building new rural settlements.
- Enhancement of institutional capacity and administrative reforms.
- Protection of the environment and natural resources, prevention against and minimizing risks of disasters; response to climate change; and sustainable development and green growth.
- Support to promote commerce, investment, finance, banking, tourism and production and business services to strengthen competitiveness ability of the economy.
- Support for implementation of national target programs.
- Several other prioritized domains under decisions of the Prime Minister.

ODA and concessional loan mobilization are based on:

- Socio-economic development strategies, master plans, sector plans, and those of the provinces, cities and localities.
- The national strategy for public and foreign debts, 2011 – 2020 with a vision to 2030.
- The orientation of ODA, and concessional loan funding, management and use.
- National target programs and those of provinces and cities.
- Programs, strategies and directions between Viet Nam and donors.

The responsibility for ODA and concessional loan mobilization is with the Ministry of Planning and Investment (MPI). Other ministries assume the prime responsibility for, and coordinate with MPI and relevant agencies in accessing ODA and concessional loan mobilization at sector level. The Provincial People's Committees assume the prime responsibility for, and coordinate with the MPI and relevant agencies in ODA and concessional loan mobilization at local level. A provincial or local managing agency is created for all such projects, and the competent authority establishes a project management board. On the basis of cooperation orientation and areas prioritized for use of ODA, the managing agencies send the MPI an official dispatch request for financing and enclose a proposal on programs or projects.

The process of mobilization, management and use of ODA and concessional loan has five steps

- Formulation of and approval for aid assistance.
- Preparation, appraisal, approval of program or project proposal/outline.

- Signing International agreements on ODA and concessional loans.
- Organizing the implementation of programs or projects.
- Supervision and assessment of programs or projects.

The managing agencies send an official dispatch list to MPI to submit to the Prime Minister for approval. An outline of programs or projects is required to show the demand and justify the project. The outline is a document which describes in general the conditions, necessity, target, content, results, essential activities, estimated total capital investment requirements, funding sources and structure, proposed domestic financial mechanism, and implementation arrangements.

After approval, the managing agency proceeds with the preparation, appraisal and approval of the program or project. This involves preparing a feasibility study report. Appraisal is under responsibility of owning agency but results must be approved by MPI and the Prime Minister. Assessment and appraisal are prepared under the guidelines of MPI—guidelines to prepare feasibility reports were approved by the Prime Minister under decree no. 48/2008/QĐ-TTg. The feasibility report has six major sections:

- Summary report of the project/program.
- Context and rationale.
- Description—design, resources and outputs.
- Investment, funding structure, financial schedule.
- Implementation and operation and maintenance.
- Outcomes and impacts.

In the three cities, Ha Giang, Vinh Yen and Hue, the provincial PPC is designated as the management board to prepare the project list. The management boards hired local consultants to prepare pre-feasibility studies and then full feasibility studies.

5.2.2 Technical weaknesses and issues within the process

Operation and maintenance (O&M) costs provision

There are no requirements in the subproject feasibility studies or preliminary—basic—designs for the estimation of operations or maintenance costs. Hence, government is investing in subprojects based only on estimated construction and other capital costs. Furthermore, operation and maintenance costs often are neither planned nor budgeted by the cities. Without proper maintenance, infrastructure degrades and its lifespan is reduced. Appropriate O&M costs should be estimated and included in the feasibility studies. O&M task descriptions should be included in the terms of references for the detailed designs.

Most subprojects of the Program include innovative green technologies that are new to most professionals in Viet Nam. These technologies require further documentation and translation into Vietnamese. Under the Program, specific technical capacity building is needed to ensure appropriate O&M for:

- Wastewater treatment plant and wastewater pumping stations.
- Stormwater low impact development (LID) collection and treatment units—bioretention swales and drainage ditches that have been integrated in most roads and parks.
- Landscaping, linear parks and embankments.

Comparison of different options

Some major public investments require more sophisticated technology, and a comparison of alternative but feasible options should be undertaken. Life cycle assessments, including operation and maintenance costs, should be undertaken and included in feasibility studies. Such subprojects should be evaluated on the basis of medium-term and long-term benefits against life cycle costs. Operation and maintenance costs, and the lifespan of the infrastructure should be integrated into the decision making process at the

planning stage. Higher quality infrastructure may be more expensive at first in terms of higher construction and equipment costs, but may often involve lower O&M costs, and have a longer life. However, this is not always the case, and some facilities, such as a water treatment plant, adopt less expensive technology which may also involve lower O&M costs.

Lessons from past experience

Subprojects should be analyzed in terms of clear short-term and long-term benefits, based on actual experience of past public investments—costs and benefits. But the results are rarely documented and lessons learned are not recorded. Wastewater treatment plants, for example, are major public investments but many facilities built over the past 10 years are only partly in operation because of expensive operation costs, a lack of maintenance parts, or poor management due to a lack of training and knowledge. Government should assess and document past public investments and establish lessons learnt, and use the findings in the evaluation of future investment options.

Climate change adaptation (CCA), and disaster risk reduction and management (DRRM) measures are lacking in most subprojects

Despite the national change climate policy, impacts on climate from infrastructure development are neither well known nor understood by local authorities and professionals. Techniques to improve climate change adaptation and to reduce disaster risks through greener infrastructure should be part of all new investment programs. Subprojects, in the following sectors, should integrate greener concepts and guidelines as local climate change mitigation measures:

- *Road development*: stormwater retention and treatment—flood control, water quality, pedestrian, bicycle and public transit integration—GHG reduction, vegetation—heat islands and GHG reduction, low energy consumption lighting—GHG reduction, and air quality.
- *Stormwater drainage*: stormwater retention and treatment, flood control, surface water quality, smells and air quality, and bioretention to reduce river erosion.
- *River and lake embankments and dredging*: flood control, water quality, vegetation, biodiversity, heat islands and GHG reduction, and air quality.
- *Water and wastewater collection and treatment*: public health, flood control, surface water quality, irrigation and agriculture, energy consumption—GHG reduction, odors and air quality.
- *Buildings*: green roofs, low energy consumption lighting and air-conditioning—GHG reduction, solar energy, low water consumption and water recycling, vegetation—heat islands reduction, and landscaping.
- *Park and green zone developments*: vegetation, biodiversity, GHG reduction, heat islands reduction, active lifestyle promotion, and environmental education. They also can be used as flood control zones—as natural dikes or retention basins.

Technical documentation on CCA, DRRM and green infrastructure are lacking in Vietnamese

Even when presented during workshops and training, green infrastructure solutions are not seen as applicable in Viet Nam, and impacts are seldom known or understood. Training workshops, and integration into regular engineering, architecture and scientific university curriculum, and all design guidelines—such as the Singapore Water design guidelines⁷⁴—should be developed and adapted for the Vietnamese context.

5.3 Program Poverty Reduction, Gender and Social Impacts

This section examines the current approach of the GOV to poverty reduction, gender and social impacts. Further details are given in **Appendix 13**.

⁷⁴ <http://www.pub.gov.sg/abcwaters/abcwatersdesignguidelines/Pages/ABCDesignGuidelines.aspx>

5.3.1 Link of the Program to the National Poverty Reduction and Gender Strategies, and Country Partnership Strategy

The Program is in line with the implementation of the GoV's National Program on Urban Development 2011–2020, and the Socio-Economic Development Strategy 2011–2020.⁷⁵ It also supports the key thrusts of the GoV's Socioeconomic Development Plan, including the (i) decrease in unemployment rate in the urban areas; (ii) increase in the per capita income by 22.5% from 2010 to 2015; (iii) decrease in the number of poor households at an average of 2% per year, with a 4% decrease per year in extremely poor districts and communes; (iv) mobilize social resources for poverty reduction work; and (v) encourage greater social involvement in protecting the environment.

Other enabling policies and programs supported by the Program include the Viet Nam National Green Growth Strategy,⁷⁶ the National Climate Change Strategy and Action Plan; city master plans; and the Government's Sustainable Poverty Reduction Program for 2011 to 2020—Resolution No. 80/NQ-CP. The key thrusts of the sustainable poverty reduction program include targets on (i) prioritizing resources for poverty reduction and improvement of living conditions; (ii) creating equal opportunities in accessing development resources and basic services; (iii) sustainably developing urban areas; and (iv) developing the urban system to provide a good quality of life, while protecting the environment and maintaining a balanced ecology.

The Program has been designed in accordance with the Government of Viet Nam's Law on Gender Equality (2006) and Decision No. 2351 Approving National Strategy for Gender Equality for 2011 to 2020. These provide the framework for mainstreaming gender into policy development, and into programs and activities of government organizations. Key strategies include: (i) intensify women's holding of managerial and leading positions; (ii) increase access of rural poor and ethnic minority women to economic resources and the labor market; (iii) ensure equal participation of men and women in education and training; (iv) ensure gender equality in healthcare services; (v) ensure gender equality in the culture and information; and (vi) ensure gender equality in family life, incrementally eliminating gender-based violence.

ADB Country Partnership Strategy.

The Program is aligned with the ADB and Viet Nam Country Partnership Strategy (CPS) 2012–2015 and Urban Operational Plan 2012–2020, which cover initiatives towards fostering balanced growth and environmental sustainability. The ADB's country focus on Viet Nam is anchored on three key pillars of inclusive growth, enhancing economic efficiency, and environmental sustainability, encompassing the priority sectors on transport, water supply, and other municipal infrastructure and services. The Program follows the basic pillars of the CPS, wherein the initiatives under the green city growth model ensure the tenets of equity, economic competitiveness, and environment sustainability.

The outputs of the Program also aim to contribute to Viet Nam's overall gender equality targets and the CPS of increasing access of women to basic services, such as water supply and sanitation, solid waste management facilities, and roads, among others, to improve household living conditions. Road upgrading and related developments will improve women's mobility and access to services and markets. River embankments and parks will provide spaces for men, women, children, and elderly for recreation and provide opportunities for social and cultural events. Improved access to economic resources and labor market for women and men are also expected with the employment and livelihood opportunities to be achieved through economic development spurred by the Program.

⁷⁵ Government of Viet Nam, Ministry of Planning and Investment. 2011. *Socio-Economic Development Strategy, 2011–2020*. Ha Noi (January). Government of Viet Nam, National Assembly. 2011. *Socio-Economic Development Plan, 2011–2015*. Ha Noi; Government of Viet Nam. 2012. *No. 1659/QD-TTg: Decision on the Approval of the National Program on Urban Development in 2011–2020 period*, Ha Noi, 7 November.

⁷⁶ Government of Viet Nam. 2012. *No. 1393/QD-TTg: Decision on the Approval of the National Green Growth Strategy, 2012 – 2020* Ha Noi, 25 September. Government of Viet Nam, Ministry of Planning and Investment. 2014. *Draft National Action Plan on Green Growth in the period 2012–2020*. Government of Viet Nam. 2012. *No. 1474/QD-TTg: Decision on Promulgation of National Action Plan on Climate Change in the Period of 2012–2020*, Ha Noi, 5 October.

The Program is classified under the category of **effective gender mainstreaming (EGM)**, wherein subproject outputs are designed to improve women's access to urban infrastructure and services, economic and financial resources and opportunities, and enhancing voices and rights. The proposed subprojects will include gender-specific physical design features and opportunities for women to participate in subproject implementation. The Program will target increasing the participation rate of women from city to commune levels in decision-making through membership in the PMU and community monitoring groups, and in delegating the Women's Union for information, education and communications (IEC) activities. Capacity building activities are designed to strengthen the skills of the city government staff and women leaders of the communes.

5.3.2 Key Social and Gender Issues

Poverty Profile

Although there are several poverty line definitions in Viet Nam, the two most important are those of GSO-WB and MOLISA. According to MOLISA, the poverty rate has declined from 21.7% in 2005 to 5.8% in 2014. Using GSO-WB calculations, the poverty headcount was 15.9% in 2006, 14.5% in 2008, 20.7% in 2010, and 17.2% in 2012 (**Table 5-2**).

Table 5-2. Poverty Rates in Viet Nam, 2015.

Year	National Poverty Lines				International Poverty Lines		Total National Population
	MOLISA line, MOLISA calculation	MOLISA line, GSO calculation	GSO-WB poverty line	GSO-WB extreme line*	US\$1.25/day 2005 PP line	US\$2.00 PP line	
	Headcount %	Headcount %	Headcount %	Headcount %	Headcount %	Headcount %	
2005	21.7						82,393,500
2006	18.0	15.5	15.9	6.6	21.4	48.2	83,313,000
2007	14.8						84,221,100
2008	12.1	13.4	14.5	6.1	16.8	43.3	85,122,300
2009	11.3						86,025,000
2010	14.2	14.2	20.7	8.0	3.9	16.8	86,932,500
2011	11.8	12.6					87,840,000
2012	9.6	11.1	17.2	5.6	2.4	12.5	88,772,900
2013	7.8	9.8					89,708,900
2014	5.8						90,500,000

Sources: GSO (MOLISA poverty rates calculated by GSO), MOLISA (MOLISA poverty rates calculated by MOLISA), World Bank 2012 (GSO-WB poverty rates), World

Development Indicators (population figures and international poverty rates)

Note: GSO-WB extreme poverty line figures are based on the food poverty line for 1993-2008 and 2/3 of the GSO-WB poverty line for 2010-2012.

WB= World Bank, GSO = General Statistics Office, MOLISA = Ministry of Labour, Invalids and Social Affairs, VHLSS= Vietnam Household Living Standard Survey, NCP = National Census of Poverty

Access to Infrastructure and Services

There is a significant portion of the population without access to water supply and sanitation facilities in the three Program provinces. (World Bank, 2009). Some 22% of the population in Ha Giang, 37% in Vinh Phuc, and 69% in Thue Thien Hue had access to flush toilets in 2009. Only 9% of the population in Ha Giang province had access to potable water, and this was mainly in the city area. In Vinh Phuc and Thua Thien Hue provinces, about 52% and 79% of the total population, respectively, had access to potable water. 100% of households in Vinh Phuc, and 99% of households in Thue Thien Hue provinces had access to electricity, while in Ha Giang province, only 79% has such access. Secondary school

attendance in Vinh Phuc province was 84%, followed by Thua Thien Hue at 78%, and Ha Giang at 56% (Table 5-3).

Table 5-3. Access to basic services by Province, 2009.

Province	Ha Giang	Vinh Phuc	Thua Thien Hue
	Percent to total population		
Energy, Water & Sanitation (among households)			
Electricity:	79%	100%	99%
Flush toilet (indoor):	8%	12%	54%
Flush toilet (outdoor):	14%	26%	15%
Flush toilet (any):	22%	37%	69%
Water (piped, public tap, well):	9%	52%	79%
Secondary school attendance (among secondary-school age children)			
Overall [11-18 years]:	56%	84%	78%
Lower [11-15 years]:	69%	95%	87%
Upper [16-18 years]:	36%	68%	62%

Source: World Bank 2009; <http://www.worldbank.org/mapvietnam/>

Gender Indices

The population sex ratio—number of men per 100 women in 2010 was 97.7 in Viet Nam—in urban areas it was 94.7, much lower than that of rural areas (99.1). In 2009, according to UNDP Human Development Report, Vietnam ranked 94th out of the 182 countries with a Gender Development Index (GDI)⁷⁷ of 0.72, the average group on human development². GDI for Ha Giang Province was among the lowest in 2009. Viet Nam's gender empowerment measure (GEM)⁷⁸ index in 2009 was 0.56 according to the GSO, indicating the opportunity of women and men in politics, and participation in the economy was generally equitable (GSO 2012)⁷⁹.

Women's Representation in People's Councils

The proportion of female representatives in People's Councils, from 2011 to 2016 was 25.2% at provincial level; 24.6% at district level; and 21.7% at commune level. But these are below the 30% target of women's representation in all elective posts as indicated in the National Strategy on Gender Equality 2011-2020.

Labour Force Participation

The proportion of women in labour force in 2010 was 72.4%, and 81.3% for men. In the agriculture, forestry and fishery sector, the participation rate for men and women were 48.9% and 51.1% in 2010, respectively; in manufacturing, they were 47.5% and 52.5%; while in service sectors, such as information and communication, the women's participation rate was only 37.9%, against 62.1% for men. In contrast, the proportion of female labour in education and training was much higher at 68.5% against 31.5% for men.

⁷⁷ Gender Development Index (GDI) reflects achievements in three aspects of human development from the perspective of gender equality, including life expectancy, education and living standards, taking into account the different levels achieved between men and women. GDI takes values between 0 and 1, wherein if GDI approaches nearer to value 1, the level of equality between the 2 sexes is higher and vice versa.

⁷⁸ GEM reflects the inequality of opportunity of women in three areas, including (i) the participation and the decision right in politics; (ii) the participation and decision right in economics; and (iii) the right in economic resources.

⁷⁹ Gender Statistics in Viet Nam 2000-2012, General Statistics Office of Viet Nam

Key Gender Issues

Progress towards achieving gender equality on Viet Nam has been significant, especially in education, maternal health care, and in expanding economic opportunities. Viet Nam had one of the highest labor force participation rates in the developing world, at 82.2% for men and 73.0% for women in 2013. However, many female workers were unpaid family workers—53.5%. Women are also politically active at the national level, with 24.3% female Members of Parliament in 2014, which is the highest proportion in the Asia-Pacific region, however, it has declined from 27.3% in 2005 (World Bank). Significant challenges still remain because of limited women’s participation in public decision-making, a highly gender-segregated labor market, and the increasing incidence of HIV/AIDs⁸⁰. Some 250,000 people were living with HIV/AIDs in Viet Nam in 2014, of whom about 77,000 or 31% were women—attributed to infected needles through drug use, and from sex workers.⁸¹

There is very little participation of women in developing and implementing urban infrastructure subprojects, except for information campaigns related to clean environment, sanitation and hygiene. Gender considerations are not institutionalised in feasibility study preparation, except for those of donor-funded projects. A rapid assessment of gender mainstreaming in infrastructure projects in the three Program cities has identified that there is little or no gender analysis—identification of gender issues, gender impacts—in the subproject proposals. None or few gender design features, targets or indicators, or gender action plans are used in the design of infrastructure subprojects⁸².

Addressing Key Social Poverty and Gender Issues

The Program will contribute to the overall poverty reduction initiatives of GoV by improving access of households, especially the poor, to basic infrastructure, such as better drainage, improved roads, river embankments, solid waste facilities, wastewater collection and treatment, and green parks and open spaces. Improvements in the access to urban infrastructure can lead to higher productivity, employment and income opportunities, thereby reducing poverty by raising household incomes and consumption.

The Program will also address key gender issues by encouraging women’s participation in commune and city-level management, within technical offices or serving on committees. Women’s participation in key decision-making activities under the Program on planning and implementation, together with the job opportunities generating by the investment subprojects, make good starting points for improving GDI and GEM indices—gender equality targets—in general.

5.3.3 Assessment of Needs, Demands, and Priorities for Basic Infrastructure and Utilities

Consultations with representatives from the cities and communes, and civil society groups, have enabled the identification of the specific needs and priorities of the vulnerable sectors, including women, persons with disabilities, elderly, ethnic minorities, and poor households. The latter require programs on livelihood and income generation, loans or credit support, health care, and access to water supply and other basic services. Overall, there is a need to increase the awareness on gender equality issues through information sharing. **Table 5-4** summarises the inputs of the participants.

Table 5-4. Specific Needs, Demands, and Priorities of Vulnerable Sectors, Per City

Vulnerable Sector	Needs, Demand, and Priorities		
	Ha Giang City	Hue City	Vinh Yen City
Women	<ul style="list-style-type: none"> Equality between men and women Sustainable jobs; more opportunities for income generation; loans for livelihood for poorer 	<ul style="list-style-type: none"> Change behavior of both men and women through awareness raising activities on gender equality More participation of 	<ul style="list-style-type: none"> Livelihood, employment, and credit support for women Training and capacity building for women. Leisure and entertainment

⁸⁰ ADB Country Partnership Strategy: Viet Nam, 2012–2015

⁸¹ UNAIDS, 2014 (<http://www.unaids.org/en/regionscountries/countries/vietnam>)

⁸² Rapid Survey on Capacity Assessment of Hue, Ha Giang, and Vinh Yen Cities on Gender Mainstreaming in Infrastructure Projects, SCDP TA Team, August 2015.

Vulnerable Sector	Needs, Demand, and Priorities		
	Ha Giang City	Hue City	Vinh Yen City
	<ul style="list-style-type: none"> women • Opportunity for higher positions, more authority, leadership • Better drainage system • Capacity building programs • Health care support 	<ul style="list-style-type: none"> women; at least 40% women to attend workshops and training • Improve women's access to social services 	<ul style="list-style-type: none"> needs of women met.
Men	<ul style="list-style-type: none"> • Sports center • Sustainable jobs 	<ul style="list-style-type: none"> • More job creation • Increase awareness and knowledge on environmental protection • Improve information-sharing 	<ul style="list-style-type: none"> • Sustainable livelihood and employment
Disabled/Elderly	<ul style="list-style-type: none"> • Support from the government • Educational support for children from poor households—school fees—and disabled children • Special school facilities for disabled • Transport mobility • Health care for the elderly 	<ul style="list-style-type: none"> • Build more community facilities for the elderly • Develop more elderly care services • Provide suitable jobs for disabled persons • Transport services for the elderly, improve the traffic system for better accessibility • More parks, entertainment centers, and nursing homes for elderly • Create separate line for services for the disabled people • Develop nursing homes for disabled people • Reduce age limit for subsidy programs for the elderly 	<ul style="list-style-type: none"> • Services and facilities for elderly and disabled persons—educational facilities, nursing or care centers, etc. • Guaranteed welfare services for the elderly • Employment or livelihood opportunities for disabled persons • Public facilities to enable the access of the disabled persons and elderly
Ethnic minorities	<ul style="list-style-type: none"> • Improved living standards • Accept modern technology—internet—to connect with other people • Support for housing • Sustainable jobs/source of livelihood • Electric network and piped water supply 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Poor people	<ul style="list-style-type: none"> • Loan to pay for water connections • Income generating opportunities • Health care insurance 	<ul style="list-style-type: none"> • Provide loan program • Provide career training • Reduce fees for poor to access entertainment services 	<ul style="list-style-type: none"> • None
All	<ul style="list-style-type: none"> • City lights, better transport system, upgrading of rural transport network • Piped water supply • Electricity 		

Vulnerable Sector	Needs, Demand, and Priorities		
	Ha Giang City	Hue City	Vinh Yen City
	<ul style="list-style-type: none"> • Good drainage, toilet/sanitation system • Good solid waste management • Internet network—connect rural with urban • Access to TV sets • Economic development; increased income • Sustainable jobs; opportunity to work abroad • More entitlements for various groups • No violence 		

Source: PPTA Consultants

5.3.4 Sector Assessment

Poverty Reduction and Participation

The policies of the GOV—existing legislation and procedures—relating to poverty reduction and community participation that have been reviewed vis-à-vis, ADB’s policies and procedures, are:

On frameworks and strategies relating to poverty reduction:

- Resolution No. 80/NQ-CP on sustainable poverty reduction during 2011-2020.
- Resolution Approving the 5-year Socioeconomic Development Plan for 2011-2015.
- Decision Approval of the National Green Growth Strategy No. 1393/QĐ-TTg September 2012.
- Decision No. 59 (2012) on Legal Aid Policies for the Poor, Ethnic Minorities at Poor Communes in the 2013-2020 Period.

On policies or procedures for defining the poor and vulnerable households:

- Decision No. 529 on Approving the Result of Survey, Revision on Poor Households and Near Poor Households in 2013.
- Decision No. 09 (2011) on Setting norms on poor households and households in danger of falling into poverty for the 2011-2015 period.

On policies or procedures on participation and feedback mechanism:

- Decree No: 79/2003/ND-CP on Promulgating the Regulation on the Exercise of Democracy in Communes.
- Law No. 09/1998/QH10 on Complaints and Denunciations.

Some congruencies were noted between the ADB SPS and GOV Policies on consultation, among them: (i) consultation begins early in the project preparation stage, and is carried out throughout the development cycle, in line with Decree No: 79; (ii) consultation enables the incorporation of all relevant views of affected people and other stakeholders into decision making, in line with Decree 79; and (iii) similar grievance mechanism is set to report and settle any complaints.

The key provisions on the implementation of IEC activities on green growth assigned to women’s unions and other mass organizations, and the development of the basic infrastructure on transportation, water supply, drainage, and waste treatment under the National Green Growth Strategy and the National Action Plan on Green Growth, are in line with the Program’s overall thrust. The Decree No: 79/2003/ND-CP on Promulgating the Regulation on the Exercise of Democracy in the Communes also provides a strong framework for ensuring a consultative process from the design of the Program and its specific subprojects, through implementation and monitoring.

Gender Mainstreaming

Viet Nam has made considerable progress on policies towards achieving gender equality, especially under the Law on Gender Equality (2006). The government is a signatory to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). A National Strategy for the Advancement of Women by 2020 (Decision No. 2351) has been approved and the supporting National Plans of Action for the Advancement of Women have been developed since 1995. Three plans of action have been drafted to cover the years to 2010. However, no update is currently available or under preparation. Other key GoV policies and procedures related to gender mainstreaming are:

- Decree No: 19 on Ensuring the Participation in the State Management by Vietnam women's union of various levels (2003).
- Law on Gender Equality (2006).
- Decree Providing Measures to Assure Gender Equality at the Government (2009).
- Decision No. 2351 Approving National Strategy for Gender Equality for 2011-2020 (2010).
- Decision 567 Approval of the Action Plan on Gender Equality for 2011 – 2015 for the Sector of Labour, Invalids, and Social Affairs (2011).
- Decision No. 56 on the Promulgation of the Set of National Indicators for Gender and Development statistics (2011).
- Decision No. 395 On Stipulating Law Information, Communication Plan on Gender Equality (2012).

*The Gender Mainstreaming Guidelines in National Policy Formulation and Implementation*⁸³ was developed as a tool to ensure that all efforts and interventions of the government are gender responsive and will contribute to the achievement of targets set out in Decision No. 2351. The extent to which these guidelines are applied into national, provincial, city, and commune government levels, has yet to be assessed. From discussions with the DOLISA and women's union in the three cities, the Law on Gender Equality and Decision No. 2351, serve as primary guidelines for city governments in planning and implementing subprojects.

Gender-disaggregated indicators have been included in national surveys conducted by the GSO. Gender statistics have been published and disseminated from central to local levels, including Statistical Data on Labor and Employment in Viet Nam and Results of the Survey of Households Living Standards Survey. Monitoring gender equality targets is undertaken through statistics regularly collected and recorded by the GSO.

5.3.5 Rapid Capacity Assessment

A rapid survey was conducted under the PPTA, on the capacity of key city government departments, mass organizations, and state enterprises who will undertake the social, gender, and community consultation activities of the Program. The results show that the key city departments, community mass organizations and state enterprises require capacity building, including training on project management tools, monitoring and evaluation methods, and related ADB policies on safeguards, procurement, and financial management. Although the mass organizations have extensive experience of IEC or awareness raising activities, they still acknowledge the need to improve IEC skills and tools.

The preparation of feasibility studies are usually undertaken by local consultants, and there is limited experience and expertise on conducting household socio economic surveys, resettlement surveys or detailed measurement surveys, and willingness to pay surveys among the PMUs and other agencies. There is a need to provide technical support and training to conduct household, socio economic surveys, resettlement surveys, detailed measurement surveys, and willingness to pay surveys. Training in the

⁸³ Gender Mainstreaming Guidelines in National Policy Formulation and Implementation: Towards Gender Equality in Viet Nam through Gender Responsive National Policy Planning, National Committee for the Advancement of Women in Viet Nam (2004), prepared under the NCFW-UNDP-Netherlands Project VIE 01-015-01 Gender in Public Policy.

preparation of gender action plans, including design features and targets in infrastructure subproject design, is needed.

5.3.6 Linking Program Outcomes to Government Poverty Reduction and Gender Targets

Social and gender plans have been drafted by the PPTA team to address the potential negative social impacts and risks of subprojects, and in achieving poverty reduction and gender targets under the Program—**Table 4-36** outlines the Social and Gender Action Plans. The critical activities proposed are set out below.

Poverty Reduction and Community Participation

This covers:

- Establishing at least one Community Monitoring Group (CMG) in each commune, with at least 30% women members. It will comprise representatives from the PMU, Women's Unions, Fatherland Front, Youth Union, elderly association, resident group leaders, and commune people's committees—ward/commune level. The CMG will be tasked to support the PMU on (i) conducting community consultations, gathering feedback, and resolving grievances or complaints from subproject feasibility to operations and maintenance; (ii) monitoring actual construction activities and progress of subproject implementation; and (iii) monitoring activities, targets and outputs of the social and gender plans and communication and participation plans.
- Incorporating specific design features to ensure accessibility and affordability of services in subprojects. Further consultations with affected commune residents, peoples' committees, women's unions, Fatherland Front, elderly associations, youth associations, and persons with disabilities (PWDs) on specific design requirements will be undertaken at subproject feasibility stage. Low impact design features will be identified, and incorporated into the detailed engineering plans to ensure vulnerable groups can have access to and can afford the services.
- Preparing feasibility studies for the loan and savings programs to finance household sanitation and sewerage connections in Ha Giang and other cities. This program would allow poor households to borrow money to finance the construction of toilet facilities and wastewater connections. The feasibility study should include: (i) household socioeconomic survey; (ii) willingness to pay survey; (iii) assessment of establishment of a savings group for poor households to improve loan payment capacities; and (iv) assessment of the capacity of the DOLISA, women's unions, CMG, and commune peoples' committees to assist in its implementation.
- Training or capacity building activities for the PMU, DOLISA, CMG, Women's Unions, Fatherland Front, Youth Unions, commune people's committees, and other partner organizations. With a target of at least 30% women participants.

Gender Mainstreaming

To mainstream gender considerations into the Program, it is recommended that:

- A *Social and Gender Focal Person* be appointed within the PMU. At least one staff within each PMU will be assigned as such, and will supervise and monitor the implementation of the social and gender plans prepared under this Program.
- At least 20% to 30% of the PMU staff should be women. Depending on the availability of qualified female technical staff, the cities have targeted at least 20% to 30% women staff for the PMU—Ha Giang and Hue, 30%, and Vinh Yen, 20%.
- A *National Gender Specialist* should be engaged to provide technical advisory support to each PMU in integrating gender considerations in the preparation and implementation of subprojects. The gender specialist would assist the PMU in the preparation of gender assessments, finalization of the social and gender plans at feasibility stage, and in setting up the monitoring systems and tools for the social and gender targets and outcomes of the Program.
- *Gender assessments and gender action plans* should be incorporated subproject feasibility studies. Training should be provided to PMU staff on gender mainstreaming policies and procedures through technical assistance from an external gender specialist.

Table 5-5 shows the proposed gender action plan for the Program.

Table 5-5. Program Gender Action Plan

Outputs	Activities	Indicators/Targets
Output 1: Environmental infrastructure improved	Consultations during feasibility studies stage through to detailed design to identify gender-specific design features	<p>For all subprojects:</p> <ul style="list-style-type: none"> Consultative meetings with at least 50% of women participants. <p>For road development subprojects:</p> <ul style="list-style-type: none"> Number of access ramps for disabled person constructed Area in square meters of tactile pavement for visually impaired Number of lighting fixtures installed <p>For lake dredging subproject:</p> <ul style="list-style-type: none"> Establishment of Dam Vac Lake Environmental Protection Committee with 30% women members Preservation of breeding areas in Dam Vac Lake for specific indigenous fish and mollusc species Specified areas for recreational and subsistence fishing; restrictions on large scale commercial aquaculture activities <p>For wastewater connections and loan funds:</p> <ul style="list-style-type: none"> Number of borrower beneficiaries, with at least 30% women Number of savings groups established per commune with at least 30% women members
Output 2: Low-carbon development and economic competitiveness promoted	Incorporate gender-specific design features in the detailed engineering design of subprojects	<p>For road development subprojects:</p> <ul style="list-style-type: none"> Number of lighting fixtures installed Number of access ramps constructed Number of square meters of tactile pavement for visually impaired <p>For park development and landscaping subprojects:</p> <ul style="list-style-type: none"> Number of toilet facilities for women and for men Number of public taps for potable water Number of access ramps for disabled person constructed Area in square meters of tactile pavement for visually impaired Area in square meters of children's play area Area in square meters of exercise areas for elderly Number of lighting fixtures installed Area in square meters of landscaped/green areas with benches, tables, cottages/resting areas Area in square meters for canteen/restaurant areas Area in square meters of kiosk areas for small enterprises—souvenir items, food items etc. Area in square meters of open area/platform area for community activities and public performances Number of access stairs along the embankment Area in square meters of parking areas
Output 3: Inclusive and resilient development for communities	Design and implement gender-responsive IEC programs on: (i) household sanitation and hygiene practices; (ii) 3R – reduce, reuse, recycle, waste segregation and disposal; (iii) community-based disaster risk management;	<ul style="list-style-type: none"> Number and type of IEC activities conducted per commune Number of IEC participants, with at least 50% women

Outputs	Activities	Indicators/Targets
	and (iv) loan fund and savings mechanism for program to finance household sanitation	

Source: PPTA Consultants

5.3.7 Summary Program Action Plan

Major gaps and issues, actions, responsible agencies, and the timeframe for implementation of the social and gender aspects of the Program are summarized as **Table 5-6**.

Table 5-6. Summary Program Action Plan—Social and Gender

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Result Area 1—Improved infrastructure delivery in participating cities			
No specific local policies or regulations on incorporating accessibility requirements or specific needs of persons with disabilities (PWDs), elderly, children, and women, and other vulnerable groups in the design of infrastructure subprojects.	Develop guidelines for gender-specific design features through consultations with representatives of the Fatherland Front, Women's Union, Elderly Association, Youth Association, and PWDs groups on specific design requirements	<ul style="list-style-type: none"> • CPC • ODA/PMU • Women's Union • Fatherland Front • DOLISA 	2016 - 2017
	Prepare CPC Resolutions on incorporating accessibility requirements for persons with disabilities in public infrastructure and buildings, following international standards—ISO/TR 9527 – Building Construction – needs of Disabled People in Buildings – Design Standards, and other similar city-level guidelines.		
Low interest and capacity of households to connect to the tertiary sewers.	Prepare feasibility studies for loan and savings programs to finance household wastewater connections.		2016 onwards
Result Area 2—sustainable infrastructure investments			
Limited participation of community stakeholders during subproject implementation.	Establish a Community Monitoring Group for each affected Commune—at least 30% women members	<ul style="list-style-type: none"> • CPC/ODA PMU • Women's Union • Fatherland Association • DOLISA • DONRE 	2016-2017
	Conduct IEC/awareness raising activities at commune level on: (i) household sanitation and hygiene practices; (ii) 3R – reduce, reuse, recycle, waste segregation and disposal; (iii) community-based disaster risk management; and (iv) loan fund and savings mechanisms to finance household sanitation improvements.		2016 onwards
Result area 3—national green policy, support and oversight			
Low level of awareness among affected communes regarding the proposed subprojects.	PMU to conduct regular consultations with affected communes—with at least 50% women participants	<ul style="list-style-type: none"> • CPC • ODA/PMU • Women's Union • Fatherland Association • DOLISA • DONRE 	2016 to 2018
Limited participation of community stakeholders during subproject implementation.	Formal establishment of the Dam Vac Lake Environmental Protection Committee with at least 30% women members—Vinh Yen.		2016-2017
Gaps in existing technical capacity of PMU to implement the	Designation of Social and Gender Focal Person at PMU		2015-2016

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
subprojects, particularly regarding the social and gender plans.	Designation of at least 20% women PMU professional staff		2015-2016
	Build capacity of PMU staff, including training and workshops for representatives from Community Monitoring Group, DVLEPC, Commune PCs, Women's Union, Fatherland Front, DOLISA, DONRE, on: <ul style="list-style-type: none"> • Program planning, implementation, monitoring and evaluation tools and skills. • Gender equality policies, and gender mainstreaming in subprojects. • Safeguards policies on social, gender, environment and resettlement. • IEC tools—planning, implementation, monitoring and evaluation, communication and public speaking skills. • Procurement policies and procedures. • Financial management procedures. • Construction supervision and monitoring. • Household data collection—household socioeconomic survey/census tools, resettlement or detailed measurement surveys and willingness to pay surveys. • Climate change and disaster risk reduction and management. 		2016 onwards

Source: PPTA Consultants

5.4 Program Economic and Financial Analyses

Viet Nam is taking steps to improve the design and implementation of ODA and less concessional-funded programs and projects. A review undertaken by the GoV concluded that there is limited capacity at the central and local government levels for preparing and implementing projects. In particular, there was a “lack of clear guidelines on economic and financial analysis” which constrained the determination of economically and financially feasible projects⁸⁴. As a result, the GoV requested technical assistance to prepare a set of guidelines for the economic and financial analysis of infrastructure projects to be financed by ADB.

The “*Guidelines for Economic and Financial Analysis of ADB-Financed Infrastructure Projects in Viet Nam*”—the Guidelines—was prepared in 2013 and aimed to introduce to government officials the methodology used by ADB in conducting the economic and financial analyses of infrastructure projects. Based on ADB's guidelines and policies, it summarizes the fundamental principles of economic and financial analyses, and illustrates how relevant principles were applied to specific sectors.⁸⁵ The Guidelines have undergone a series of reviews. In June 2015, “*An Introduction to Financial Analysis of*

⁸⁴ Guidelines for Economic and Financial Analysis of ADB-Financed Infrastructure Projects in Viet Nam—Second Draft. Hanoi, January 2014.

⁸⁵ Guidelines for Economic and Financial Analysis of ADB-Financed Infrastructure Projects in Viet Nam (Second Draft). Hanoi, January 2014.

ADB-Financed Investment Projects in Viet Nam" was issued, and concurred to by ADB, as the final version. For the economic analysis, no final document has been released.⁸⁶

This assessment summarizes the Guidelines as they pertain to economic analysis, describes the framework for financial analysis in the recently issued introductory note approved by ADB, and concludes with areas for improvement.

5.4.1 Economic Analysis Framework

The Guidelines were derived from ADB's methodology for conducting economic analysis of projects—mainly culled from the *Guidelines for the Economic Analysis of Projects (1997)* and *Key Areas of Economic Analysis of Projects (2003)*. The framework covers the scope of the economic analysis to be prepared, including the rationale for public intervention, quantifiable benefits for each type of infrastructure investment, and methodologies to consider in the benefit-cost analysis. For projects with quantifiable economic benefits, economic feasibility is assessed by comparing economic benefits with economic costs. If a project has a real economic internal rate of return (EIRR) of more than 12%, it is deemed economically feasible. For projects without quantifiable benefits, economic feasibility is assessed by comparing economic costs of various project alternatives with the volume of outputs each alternative is expected to generate. The alternative with the lowest cost per output—the “least-cost option”—is considered the most feasible project.

The major benefits and required cost–benefit analysis (CBA) are detailed by sector in the Guidelines. Those of direct relevance to the Program are discussed below.

- **Roads:** The direct benefits of a road subproject to existing road users mainly consist of (i) reductions in vehicle operating costs, such as fuel and maintenance costs; and (ii) travel time savings which are typically derived from average hourly wage rates. The indirect benefits which are more difficult to quantify, include (i) reductions in the price of goods shipped to or from the “area of influence” by road transport; and (ii) increased economic activity caused by lower transport costs.
- **Water supply:** The quantifiable economic benefits include (i) the increase in the value of water or the increased water sales generated by the subproject—explicitly defined as the financial revenue, net of taxes from increased water sales generated by the subproject; (ii) the non-incremental costs saved by new and existing customers; and (iii) the additional value of incremental water sales to all users. Unlike many other infrastructure subprojects, most of the economic costs and benefits of a water supply project can be quantified.
- **Sewerage:** The quantifiable economic benefits of a sewerage generally fall into: (i) the benefits accruing to persons whose wastewater will be collected and treated because of the subproject; and (ii) the public health benefits accruing to persons whose wastewater will not be collected but will benefit because of the reduction in groundwater and surface pollution. The main sources of quantifiable economic benefits are public health benefits, reduced cost of septic tank cleaning, and incremental wastewater surcharges for the services rendered.
- **Solid waste management:** Improved solid waste management (SWM) leads to better public health. The quantifiable economic benefits include: (i) public health benefits; (ii) incremental waste collection fees; (iii) tipping fees; (iv) revenues from the sale of recyclables; (v) revenues from waste-to-energy projects; and (vi) other benefits from efficiency gains. The direct benefits accrue to the persons whose solid waste will be collected and treated. The indirect beneficiaries are those who benefit through reduced ground water pollution, and reduced flooding and waterborne diseases.

5.4.2 Financial Analysis Framework

For financial analysis, the Guidelines used two relevant ADB publications—the *Financial Management and Analysis of Projects (2005)* and the *Financial Due Diligence, A Methodology Note (2009)*. The portions of the Guidelines applicable to financial analysis were reviewed, finalized and issued separately in June 2015 in a document entitled, *An Introduction to Financial Analysis of ADB-Financed Investment Projects in Viet Nam*. The financial analysis framework covered (i) the preparation of project cost estimates; (ii) forecast of incremental project net cash flows; (iii) determination of the appropriate discount

⁸⁶ As discussed by the PPTA Team with ADB on 06 July 2015 in Manila, Philippines.

rate—the weighted average cost of capital or WACC; (iv) calculation of the financial net present value; (v) calculation of the financial internal rate of return (FIRR); and (vi) conduct of sensitivity analysis. For projects that generate financial revenues from direct user charges, financial feasibility is assessed by comparing the real FIRR with the WACC of the project. Both rates are expressed in after-tax constant prices. If the FIRR is higher than the WACC, the project is deemed financially feasible. For projects that do not generate financial revenues from direct user charges, a financial feasibility analysis cannot be undertaken.

The financial analysis is presented based on realistic estimates of direct user charges affordable to the beneficiaries. The major revenues considered under the financial cost-benefit analysis relevant to the Program are:

- **Water supply:** The incremental net cash flows of the owner of a municipal water supply consist of (i) incremental water tariff revenues; (ii) incremental fees from the collection of incremental wastewater tariffs; and (iii) residual value usually calculated at <20% of incremental investment. Incremental water tariff revenues are calculated according to Circular 75/2012.⁸⁷
- **Sewerage and drainage:** The incremental net cash flows of the owner of a municipal sewerage project principally comprises (i) wastewater tariffs; and (ii) the residual value. Until recently, most subnational governments in Viet Nam charged a fee for the use of wastewater infrastructure through a surcharge to the water bill. This surcharge—also known as the “wastewater surcharge”—was usually calculated as a fixed percentage of the water tariff—typically ranging from 5% to 10%. In August 2014, the GoV issued Decree 80/2014 on Drainage, Sewerage and Wastewater Treatment, which will become effective on 1 January 2015⁸⁸. The decree stipulates that users must pay a wastewater tariff, per m³ of wastewater generated, that is based on the actual cost of the service, and no longer as a percentage of water bill—users who pay for wastewater service will not need to pay an environment protection fee. In case the wastewater tariff approved by the PPC is lower than the actual cost, the PPC must cover the shortfall of the wastewater service provider from its own budget.⁸⁹
- Similarly, Decree 80/2014 stipulates that the drainage service price must be associated with the quality of the provision of drainage. Pricing of drainage service depends on the volume of the wastewater and the pollutant content in the wastewater. In case the drainage service price decided by the PPC is lower than the price taking into account the cost of drainage service and a reasonable profit, it should take appropriate steps to compensate the service provider for the shortfall.
- **Solid waste management:** The legal mandate for setting SWM tariffs is: (i) Decree 59/2007;⁹⁰ on solid waste management; (ii) Decree 174/2007 on environmental protection charges for solid waste; and (iii) Circular 39/2008/TT-BTC on the implementation of Decree 174/2007. Incremental net cash flows can also be sourced from (i) tipping fees; (ii) revenues from sale of recyclables; (iii) revenues from sale of electricity; and (iv) residual value.

If an ADB-funded project requires temporary or permanent subsidies from a local government, the public finances of that local government will need to be analyzed. There is no commonly accepted method for conducting an analysis of the public finances of subnational governments in Viet Nam. It is usually

⁸⁷ Inter-Ministerial Circular 75/2012/TTLT-BTC-BXD-BNN on Guidelines on the principles, methods, and jurisdiction for determination of clean water tariff rates at urban areas, industrial zones and rural areas.

⁸⁸ As part of the transition process, Decree 80/2014 stipulated that with regard to the drainage plans approved for formulation before 1 January 2015, the assessment and approval of such plans shall conform to Decree No. 88/2007/NĐ-CP dated 28 May 2007 on urban drainage and industrial zones. For Provincial People’s Committees applying price adjustment procedures for drainage services according to Decree no. 88/2007/NĐ-CP, it shall continue to follow the same procedures until the next adjustment when the provisions of the new decree should be applied.

⁸⁹ Before the issuance of Decree 80/2014, ADB usually required in its loan agreements that revenue from wastewater charges must cover the full O&M cost of ADB-funded assets upon commissioning of these assets. With the issuance of the new decree, it is anticipated that ADB will require the wastewater tariff to cover the full O&M cost plus a pre-agreed portion of the capital cost of the ADB-financed assets (“the recoverable cost”).

⁹⁰ Decree 38/2015/ND-CP dated 24th April 2015 was issued, added and replaced Decree 59/2007.

sufficient to demonstrate that the required subsidies do not account for a major share of the local government's total revenue. A share of less than 5% for a project normally is deemed acceptable.

5.4.3 Gaps Assessment and Recommendations

Decision 48/2008 on “*Issuance of Common General Guidelines on Feasibility Study Preparation for ODA Projects*” prescribes the general principles to be followed by Viet Nam's development partners and project owners for economic and financial analyses. However, the Decision does not provide the methodology, and none of the circulars released so far contain detailed implementing guidelines. The Guidelines was envisioned to address this gap in the conduct of economic and financial analyses for infrastructure projects financed by ADB. They are relatively comprehensive, and provide a user-friendly attempt to guide Vietnamese government officials on how to understand and apply the basic principles of ADB's economic and financial analyses.

The “*Introduction to Financial Analysis of ADB-Financed Investment Projects in Viet Nam*,” which is based on the Guidelines, is a major step toward developing local capacity for preparing financially viable urban infrastructure projects. For economic analysis, a similar type of document is planned. This is essential and must be issued immediately to address the weak capacity in economic analysis not only of the PMUs, but also of the local consultants assisting in project preparation.⁹¹ Currently, there appears to be some confusion, and in certain cases difficulties, in distinguishing economic benefits from financial revenues for cost-benefit analysis, and the calculation of EIRR.

In terms of sector application, the Guidelines did not include flood control and drainage improvements. However, for the Program, the inclusion of this sector is vital in response to the need for climate change resilience. Flood control and drainage improvements are not revenue-generating. Hence, the economic not financial analysis will be critical to their justification. For the economic analysis, the main sources of quantifiable economic benefits of flood control and drainage improvements comprise (i) savings from reduced flood damages to lives and properties; (ii) savings from reduced agricultural production and other income losses; and (iii) improvements in public health and labor productivity as a result of reduced water and surface pollution. The cities also anticipate incremental tourism benefits from these investments.

For subprojects to be included in the Program, it is recommended by the PPTA consultants that the co-benefits valuation approach be adopted. Green growth within the context of sustainable urban development has prompted a rethinking of the traditional benefit valuation models and the adoption of the co-benefits approach. This is an innovative global response to the challenge of reducing environmental degradation and mitigating against climate change, while expanding economic opportunities and creating jobs in a rapidly urbanizing world. The co-benefits approach to green growth encourages policies and programs to transcend their environmental benefits, with additional benefits more aligned with economic development and equity. In developing countries, where economic hardships and social problems are widespread, the need for the development agenda to be an integral component of climate change adaptation and environmental protection has been acknowledged as an application of the co-benefits approach. **Appendix 14** discusses the co-benefits approach, its relevance to cities and sustainable urban development, and how it can be used for the economic analysis of projects prepared using the Green Cities Operational Framework of ADB and the GoV.

Using the Guidelines to undertake the financial analysis for the Program's subprojects, there is a need to incorporate a methodology for assessing the financial feasibility from a more spatially, economically, and socially integrated urban development perspective. Many of the proposed subprojects on their own will not generate revenues. Others, will but there is a need to evaluate how these revenues can be optimized while their public investment costs are minimized. This involves establishing how some of the subprojects may incorporate features that make them possible for public-private partnerships (PPPs).

⁹¹ Based on a PPTA team survey conducted in June 2015, the PMUs and the local consultants had very little to no capacity at all in conducting the economic analysis for SCDP proposed subprojects in accordance with ADB guidelines. During the period July - August 2015, the PPTA consultants conducted a series of workshops for the PMUs and their local consultants on the economic analysis of projects proposed for ADB financing, incorporating the co-benefits approach to the methodology within the overall ADB framework. Subsequently, the PPTA consultants are assisting the PMUs and their local consultants, at their request, in preparing the economic analysis of SCDP proposed subprojects, including activities related to data collection for the co-benefits analysis.

For assessing the financial sustainability of the Program, clearer guidelines are needed on how to determine the borrowing capacity and debt limits of the provinces. This should be seen as part of the ongoing efforts to issue decrees and circulars on how ODA and locally-financed loans and grants will be passed on to the provinces and the cities.

Table 5-7 summarises the major gaps and issues identified and outlines a program of action to resolve them.

Table 5-7. Summary Program Action Plan – Program Economic and Financial Analyses

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Result Area 2—Sustainable infrastructure investments			
Economic Analysis. PMUs and local consultants working on subproject preparation have weak capacity in economic analysis. Decision 48/2008 provides only general guidelines for economic and financial analyses but not the methodology. None of the circulars released contains detailed implementing guidelines on preparing economically feasible subprojects. Draft guidelines for the economic analysis of ADB-financed infrastructure projects in Viet Nam, prepared in 2013 with technical assistance from ADB requested by GoV, are still under review. They do not include a framework for the analysis of flood control and drainage improvements, a number of which have been proposed for inclusion in the Program. The co-benefits approach, which has also emerged as a means to mitigate climate change and promote inclusive green growth while addressing priority local development concerns, is not covered by the draft guidelines.	<ul style="list-style-type: none"> An introduction to economic analysis for infrastructure projects financed by ADB, based on the draft guidelines prepared in 2013, approved and made accessible to PMU staff and local consultants through the GoV and ADB websites 	MPI, MOF and ADB	2016
	<ul style="list-style-type: none"> A clear methodology for the economic analysis flood control and drainage improvement projects integrated in the introductory note to economic analysis to be issued by the GoV and ADB 	MPI, MOF and ADB	2016
	<ul style="list-style-type: none"> A methodology for incorporating the co-benefits approach in the economic analysis of subprojects prepared using the Green Cities Operational Framework of ADB and the GoV for SCDP prepared and issued 	MPI, MOF and ADB	2016
Financial Analysis. An introduction to financial analysis based on the draft guidelines prepared in 2013 was approved by the GoV and ADB in June 2015. The document is available in the MOF and ADB websites. Given the environment, economic, and equity perspectives of the Program subprojects, the note will need to include a methodology for assessing financial feasibility from a more spatially, economically and socially integrated framework. Optimizing revenues while minimizing public investments will entail an approach that promotes viable public-private partnerships. Clear guidelines on how to determine the borrowing capacity and debt limits of the provinces are also needed in assessing the financial	<ul style="list-style-type: none"> A methodology for preparing financially feasible subprojects considering mixed-development that covers spatial, economic and socially integrated urban development features developed and promoting public-private partnerships and private sector participation developed and applied 	PPCs and PMUs with the support of TA consultants	2016-2017
	<ul style="list-style-type: none"> Clear guidelines on how to determine the borrowing capacity and debt limits of provinces issued as part of the 	MOF	2016

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
sustainability of the Program.	ongoing efforts to issue decrees and circulars on how ODA and locally-financed loans and grants will be passed on to provinces and cities		

Source: PPTA Consultants

6 Program Systems Assessment

This chapter summarises the program systems assessments undertaken to identify institutional and system weaknesses and gaps, and recommend how these can be bridged. The assessments start with subproject monitoring and evaluation systems, particularly at the provincial and city levels. A summary of the fiduciary systems assessments follows, which focusses on the provinces and cities and the agencies to be involved in the Program. This starts with a general assessment of the public financial management system, and then goes into details for those of the participating provinces and cities. The assessment of the procurement system follows and the section is completed with a review of anticorruption measures in place. An assessment of the safeguards system follows which first covers social safeguards and then environmental safeguards. The institutional analysis and capacity assessments come next and the chapter ends with a review of stakeholders' participation and communications in the three provinces. Each review ends with its own program action plan which summarises the major gaps and issues for each, outlines actions to be taken, identifies the responsible agency, and proposes a time frame for implementation.

6.1 Monitoring and Evaluation Framework

This section is in the four parts. The first is about monitoring and evaluation (M&E) for the construction and urban sector at the macro level; the second is related to M&E for construction and ODA related projects at project implementation level; and the third relates to the financial aspects of the M&E system. The final part sets out the proposed action plan.

6.1.1 Monitoring and Evaluation System related to Construction and Urban Development Sector

Description of Monitoring and Evaluation Systems

The current monitoring and evaluation system for construction and the urban sector consists of a range of different databases. Donors' projects support the development of new databases for the urban sector, collecting data on aspects of sector development, such as poverty reduction, climate change, green development, etc. To date there no project/program designed to create a unified database that can be used for urban development monitoring, evaluation, reporting and research purposes.

The different database systems can be classified into three: (i) the statistical databases/indicators for construction sector, which include basic information used by the Vietnamese government to monitor the urban sector⁹²; (ii) the database/indicators for urban classification and upgrading; and (iii) the sets of database/indicators that are being developed by different donor-supported projects/programs. Verification of this data is done by MOC site visits through DOC and other provincial units. In addition, provincial and local government agencies, such as Inspectorates also cross check this data.

The statistical databases/indicators (Table 6-1) for the construction sector, include the urban sector, and consist of 33 indicators of which 11 are from the national statistical system and 14 are related specifically to urban development and monitored by the MOC. These 14 urban development indicators/database are: (i) numbers of cities according to different grades; (ii) urbanisation percentage; (iii) percentage of urban area covered by an approved detailed master plan; (iv) urban land areas; (v) urban investment projects; (vi) water supply capacity; (vii) percentage of non revenue water; (viii) percentage of urban population connected to the water system; (ix) average water supply provided per capita; (x) wastewater processing capacity; (xi) percentage of business connected to sewers; (xii) percentage of urban population served by drainage system; (xiii) percentage of solid waste collected and processed; and (xiv) percentage of urban areas and industrial areas having wastewater and solid waste treated to acceptable levels. Some of those indicators are included in the objectives of the NPUD approved in November 2012 under Decision 1659/QD-TTg/2012.

The current M&E system generates information on the 33 indicators required for mandatory reporting by MOC's Planning and Finance Agency (PFA); Urban Development Agency (UDA), Technical

⁹² According to the Decision 43/2010/QD-TTg, to MOC circular N 05/2012/TT-BXD dated October 10, 2012 on statistical indicators for Construction Sector

Infrastructure Agency, and the Master Planning and Architecture Agency. Each one collects a set of information and data, and report to the MOC's PFA. The statistical division of the PFA receives the data/reports on the 33 indicators from related MOC's Agencies and provincial DOCs, and enters in the database system in the form of excel spreadsheets. The system generates reports monthly—for the construction pricing indicator, quarterly, 6 monthly and yearly.

The database/indicators for urban classification and upgrading consists of 49 indicators in six sub groups⁹³. Among those indicators, the only current green growth indicator is green space/trees planted. UDA is responsible for maintaining this database system for the urban classification and upgrading. The decree related to the urban classification and upgrading is currently being revised.

The third group of databases are related to donor-supported projects. They focus on the development of different sets of indicators, indices and databases related to other aspects of urban development, such as poverty, green growth, and resilience /climate change. Prominent current examples are:

- *City Resilience Index*. This is based on the Rockefeller Foundation's City Resilience Framework, adapted to the mandates of the Ministry of Construction's Decision 2623/2013/QD-BXD on urbanization and climate change. In essence, this is focusing on the creation of an index that fits within the Rockefeller framework and meets the Urban Development Agency's needs for a tool to promote and monitor climate resilience. The draft indicators will be tested in five cities - Ca Mau, Uong Bi, Hoi An, Lao Cai, and Gia Nghia. Based on results from these cities, the indicators will be rolled out in an additional 30 cities and towns in 25 provinces listed within the Decision 2623 workplan. It will provide a comparative index of city resilience that can form the basis for revised urban development guidelines and standards under the National Urban Development Strategy.
- *UN Habitat – Urban Observatory* has also been developing urban indicators for the past five years. UN Habitat tried to work directly with cities to develop urban profiles, although significant problems were encountered with data inconsistencies. UNHABITAT has now completed 78 city profiles. UN Habitat is now developing a City Prosperity Index and already has completed a research model and training manual.
- Another UN Habitat intervention is the *Strengthening Urban Observatory and Statistical Systems [2012-2016] Project*. UN-Habitat, in cooperation with United Nations Population Fund (UNPF) and other Vietnamese partners such as the General Statistics Office (GSO), Ministry of Planning and Investment (MPI), Urban Development Agency (UDA) and Ministry of Construction (MOC), aims to promote evidence-based multi-sector master planning to respond to the requirements of the market economy. The project focuses on two areas: (i) improving the quality of urban statistical information and data in Viet Nam, especially on issues related to gender equality, infrastructure development, services, land use, and the environment; and (ii) enhancing the capacity of the GSO and UDA via urban indicator training courses to build capacity among Vietnamese policy-makers, researchers, and urban planning professionals, on the use of urban statistical data for evidence-based planning frameworks and for monitoring and evaluation.
- *Global Green Growth Institute (GGGI)* is also working with UDA, and other agencies including ADB and UNHABITAT, to develop green growth indices in three pilot cities. GGGI will have a draft plan ready in October 2015, and present it to the Ministry of Construction in December of the same year.

Other agencies of MOC maintain additional data, for example, the human resource agency is managing a database system related to MOC human resources, but it is not integrated with the “physical indicators/database systems” for the construction and urban sectors mentioned above.

Assessment of the Sectoral M&E system

Database design: all database/indicators have been designed independently and narrowly, from each stakeholder's perspective and in an ad hoc manner. They do not take into account the broader development process nor potential integration with existing systems. None of them are online and external parties are not be able to share or seek information.

⁹³ According to the Degree 42/2009/ND-CP dated September 2009.

The statistical databases/indicators for the construction sector include the 11 indicators of the National Statistical system, but they appear not to be very well organised. Some indicators are difficult to extract and are not systematically collected by local agencies. The exception is for the 11 national published indicators for the construction sector—among which five are on urban development. The process of database/indicators collected and gathered by different MOC agencies, and reported to MOC's PFA is not unified nor timely. This makes the databases inconsistent and unreliable. For example, even MOC agencies formulating policies and planning do not base their analysis on these data from these systems.

The database/indicators for urban classification and upgrading is under management of UDA. The data on the system does not show information on all of the 49 criteria for each city, and the information/database is not regularly updated. It is considered by many to be unreliable.

The database and indicators supported by donors are in line with current development of the urban sector. They show valuable trends in relation to cities but are not integrated with each other.

In conclusion: Quite a number of prerequisites for effective M&E databases are not present in the current system. Although officials agree that M&E systems are crucial and necessary, the lack of resources allocated to run the systems, particularly at local level, make the monitoring systems unreliable. The verification works are done on ad hoc basis and the information received is not shared. The M&E function is not as effective or useful as it should be, because:

- There is neither a strategic view nor vision on the refining, integration or unifying of the operating database systems and those being developed.
- Current government business does not require outcome and impact assessment, but focuses only on inputs, and on outputs, in some cases. This negatively influences the ways M&E databases are set up and operated.

6.1.2 Current practice of M&E and reporting system for construction implementation projects.

The section discusses the M&E and reporting system for construction projects using domestic/government and donor funds.

For projects using government funds

For reporting and monitoring of construction projects, all government agencies and PMUs have to follow the requirements of the decrees and decisions and circulars shown in **Table 6-1**. Supervision, monitoring reporting is undertaken monthly, quarterly and yearly. At provincial levels, the investment owner/PMU report to DPI, and on the quality of construction to DOC and Provincial People Councils. Central Agencies, MPI, MOC and other technical ministries, as well as PPCs and CPCs, also require the EA, the IA and investment owners/PMUs to send reports to them.

Each PMU has to prepare monthly, quarterly and annual reports. ODA PMUs in a province prepare two types of reports: (i) those during the project implementation which consists of a report on project progress to DPI and the PPC quarterly and yearly; and a combined report on investment supervision to DOC and PPCs every six months; and (ii) a combined supervision and evaluation report of investment results every six months to DPI. The content of the reports are different as shown in **Table 6-1**.

Table 6-1. Major Contents of Reports Submitted

Progress Project Report—to DPI	Report for Supervision and Evaluation of completed project—to DPI and PPC	Combined Report on Investment Supervision—to DOC and PPCs
I. Project Implementation Progress	I. Project Information	I. Information about construction project
1.1. Project progress	1.1. Project name	1.1. Location
1.2. Value of volume done according to the contract implementation schedule	1.2. Investment owner	1.2. Type of construction project
1.3. Fund management and disbursement progress	1.3. Consultant developing the project	1.3. Construction is on going
1.4. Quality of work done	1.4. Main objective of the project	1.4. Scope of the construction project—Scope of the project; content of investment
1.5. Other costs related to project	1.5. Scope and utilisation	1.5. Total amount of investment
1.6. Issues related to project implementation	1.6. Project location	1.6. Sources of funding
2. Project management work	1.7. Land use area	1.7. Approval agency of the project
2.1. Work plan	1.8. Project management modality	1.8 List of procurement agencies (investigation and project development; survey and drawing design; verification of cost estimation, construction supervision; project management)
2.2. Detailed plan for project management—construction; insurance; checking and certification on suitable quality of the construction project; auditing of invested capital	1.9. Project milestones	1.9. Time of the construction project
2.3. Achievement—comparison with planned and adjusted plan	1.10. Total cost and sources of financing	II. Content of the report
2.4. Ensuring quality and effectiveness of project management	1.11. Summary of the project	2.1. Summary of construction project
3. Situation of feedback responds	1.1.2. Procurement plan	2.2. Adjustment during the construction
3.1. Ensuring reporting information	II. Main content	2.3. Project handling over—during construction; during finishing; list of construction components
3.2. Processing reporting information	2.1. General report on project implementation	2.4. Assessment of construction component quality; during the construction of project components
3.3. Results of dealing with complaints raised	2.2. Achievement of the project (according to the plan approved);	2.5. Main issues related to the construction quality

Progress Project Report—to DPI	Report for Supervision and Evaluation of completed project—to DPI and PPC	Combined Report on Investment Supervision—to DOC and PPCs
II. Comment from the investment owner	2.3. Disbursement achievement	2.6. Certification of the project strength and forces
1. Project implementation situation	2.4. Factors influencing the project implementation and results	2.7. Safety during construction
2. Project management work	2.4. General information on socio economic efficiency in comparison with project objective	2.8. Plan for the next project hand over
III. Recommendations	2.5. Project impact to the sector and region	2.9. Main technical characteristics of the construction project, once finished
	2.6. Project sustainability	2.10. Recommendations

Source: PPTA Consultants

The three reports are comprehensive narrative and descriptive with both figures and words. However, there are no indicators showing the relationships between activities and outputs nor outcomes or impacts. This is insufficient for a results-based approach.

M&E for the Executing Agencies/PMUs managing ODA projects

The legal framework for monitoring and evaluation of ODA projects is fairly comprehensive. In most provinces, many PMUs have been trained on how to prepare reports as required under MPI Decision No 803/2007/QĐ-MPI on reporting for ODA projects. All PMUs are reporting to DPI on ODA projects. Under this Decision, PMUs have to prepare quarterly and yearly reports to DPI in compliance with formats provided in the decision. This prescribes that the PMU has to prepare two types of reports: (i) an excel report file—about 21-21 different excel table formats; and (ii) a narrative report. The title of some excel file table formats and report outlines are shown as **Table 6-2**. The PMUs also send these reports to MPI. According to one DPI official, the disadvantage of this reporting system is that it is difficult for the EA or DPI to know whether the information reported are correct and can be trusted. This is because there are many ODA projects, and DPI has limited resources to supervise their preparation. Furthermore there is no checking mechanism for the submitted reports.

Table 6-2. Content of Reports Send to DPI and MPI According to the Decision 803/2007.

Content of Narrative Reports	Reports Submitted with the Narrative Reports
Quarterly and Yearly Progress Reports I. General information about the ODA Project 1.1. Total cost of the project 1.2. Cost for each component /items II. Project progress report 2.1. Project implementation work—work related to: construction design document and procurement activities 2.2. Disbursement 2.3. Land Clearance	F1- General information about the project; F2- Project progress; F3_ Project progress implementation and conditions required F5- Counterpart fund; F7- Procurement plan; F8- Information of each procurement package; F11- Procurement results; F12- Contracts

Source: Meeting of PPTA consultants with PMU staff and Decision 803/2007, 2015.

All PMUs and DPis have adopted, and are complying with the reporting system of Decision 803/2007. There is a bilingual—Vietnamese/ English—website specially designed for ODA which is hosted by MPI <http://oda.mpi.gov.vn/english/Home/tabid/220/language/en-US/Default.aspx>.

Since 2009, MPI collected all reports from local and other ministerial agencies that are mostly summarised in excel files, and issued an ODA quarterly newsletter, and maintained a website in which a combined report on ODA projects' performance was posted. Tools for individuals to undertake analysis and prepare reports on ODA performance were available. But from 2011 the website has not been updated since the project funding the site has ended. However, the site is still functioning. MPI though, is the only central agency that has a systematic M&E database related to ODA-funded projects

Conclusions

From the above review, and discussions with government staff, each of the required reports contain relatively comprehensive information and data related to project content, implementation progress, and disbursements. However:

- There is no systematic monitoring and evaluation of data and information in the construction sector nor that for ODA funded projects.
- None of the PMUs, nor any government agencies, undertake project evaluation on the basis of project relevance, effectiveness, sustainability, outcome or impacts.
- Projects funded from the Government budget do not prepare cost benefit analysis (CBA). The selection and prioritization of investment projects is based on the qualitative judgments, rather than CBA.

- Government Decree, Decree 113/2009 is the first one that requires a project to be evaluated against outcome and impacts. However, in the government management system, results-based management or results-based lending/disbursements are new concepts, and monitoring and evaluation systems for impacts and/or outcomes for such projects and programs do not exist.

Given the above, strengthening of such systems will be required for the Program, and this has been taken into account under the program action plan on capacity building.

6.1.3 Financial Monitoring and Evaluation Assessment

Background and Overview

Financial monitoring and evaluation lies at the core of ensuring that Program funds are used effectively and efficiently. In Viet Nam, the management and use of Official Development Assistance (ODA)—whether in the form of grants, concessional loans, or mixed development assistance that blends grants with less concessional loans—are governed by Decree No. 131/2006/ND-CP. Chapter VI of this decree prescribes the types of monitoring and evaluation activities to be undertaken for ODA programs and projects. It assigns to the PMUs the responsibility of regularly monitoring and evaluating their programs under the guidance of the concerned project owners.⁹⁴ During program and subproject implementation, the PMUs must prepare monthly, quarterly, annual, completion and other necessary reports to the project owners for submission to the line agency, MPI, MOF, and the PPC where the program or project is being implemented.⁹⁵ Reports to the donors must be prepared in accordance with the signed loan agreements and treaties.⁹⁶ The decree further stipulates that the MOF is the lead agency for the financial management of ODA programs and projects. In this capacity, MOF's responsibilities include functions related to financial monitoring and evaluation, such as providing oversight to the financial management of ODA utilization, budgeting and accounting, data consolidation on withdrawal of loan proceeds, and debt servicing. All PMUs must comply with the relevant policies and guidelines of MOF in the preparation of their financial monitoring and evaluation reports.

Assessment of Financing Monitoring and Evaluation Capacity of SCDP PMUs

Under the financial management assessment (FMA) of the proposed executing and implementing agencies for the Program, the PPTA consultants assessed the capacity of the PMUs of Ha Giang, Hue, and Vinh Yen for program financial monitoring and evaluation. The key findings are:

- The PMUs have a clear understanding of their financial monitoring and evaluation responsibilities and of the agencies responsible for regulating and/or supervising them in their use of ODA resources; the agencies are: PPCs for provincial financial management; State Treasury for validating the use of ODA funds; MOF for ensuring that rules and regulations on accounting, budgeting, disbursement and receipt of accounts are followed; and State Audit for examining their project accounting records.
- Policies and procedures for project accounting and budgeting, which serve as the foundation for accurate and reliable financial monitoring and evaluation, are mandated by the State Accounting Law—No. 03-2003-QH11, and the State Budget Law—No.01/2002/QHII, as amended by the new State Budget Law—No. 83/2015/QH13, which will become effective in 2017. These policies and procedures are strictly followed by the PMUs of Ha Giang, Hue and Vinh Yen.
- The three PMUs believe that their existing capacity is adequate for the financial management of the Program, including financial monitoring and evaluation. They have their in-house finance and

⁹⁴ Project Owners are defined by the decree as the institution assigned by the Prime Minister or Line Agencies to take responsibility for direct management and utilization of ODA and counterpart funds to implement programs and projects in accordance with the contents approved by relevant competent authorities, and to manage and use the resulting outputs or works after program or project completion.

⁹⁵ In the case of SCDP, the Project Owners and the Provincial People's Committees of Ha Giang, Thua Thien Hue, and Vinh Phuc are effectively the same.

⁹⁶ Decree No. 113/2009/ND-CP on Investment Monitoring and Evaluation was also issued on 15 December 2009 but it explicitly states that the monitoring and evaluation of investment projects funded with ODA will comply with the law on ODA management and use (i.e., Decree No. 131/2006/ND-CP) when the latter decree contains different provisions (see Article 1.1(c) of Decree No. 113/2009/ND-CP).

accounting staff and/or their secondees from the Department of Finance (DOF). They also expressed their intention to engage additional staff as the needs arise during Program implementation. However, all three PMUs have no previous experience in implementing ADB-funded projects. They have no training on ADB procedures and disbursement guidelines. During the FMA interviews, the three PMUs requested that their staff be trained on ADB procedures—particularly concerning RBL and DLIs since this is the first time this lending modality will be used to implement a results-based urban sector investment program.

- The Vinh Yen PMUs is using the MISA.MIMOSA accounting software developed by the MISA Joint Stock Company which has over 20 years of experience in software technology and providing IT support services. The software is based on the chart of accounts prescribed by the Accounting Law. Its recording system for revenues and expenditures is compatible with the TABMIS,⁹⁷ the electronic treasury and budget management information system used by the MOF and its provincial offices. However, the MISA.MIMOSA software will not be able to produce the financial monitoring and evaluation reports for the Program, particularly the aspects related to the RBL and the DLIs. The reports produced by the software will need to be supplemented by Excel-based electronic spreadsheets to produce the financial monitoring and evaluation reports for the Program.

The Hue and Ha Giang PMUs, record transactions and prepare financial reports using Excel-based spreadsheets. Their provincial DOFs are linked to the MOF and the State Treasury through TABMIS. A financial monitoring and evaluation system—customized to the requirements of the Program, specifically the RBL and the DLIs—will have to be developed for the PMUs, and link to the TABMIS to support effective Program management and implementation. The finance and accounting staff of the three PMUs must be properly trained in the use and applications of this financing monitoring and evaluation system.

6.1.4 Program Action Plan – Monitoring and Evaluation

In summary, the proposed monitoring and evaluation program actions to be covered under the institutional and capacity development assistance are shown as **Table 6-3** below. The TORs for this support are set out in **Appendix 20**.

Table 6-3. Proposed Institutional and Capacity Development Program Actions

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Results Area 1 – Program Implementation Assistance			
Weakness in the capacity to monitor and evaluate the implementation of an ADB results-based lending operation.	Support the PMUs in documenting detailed design, procurement and supervision activities related to subprojects under the Program, focusing on the need to provide timely and reliable inputs to an effective and efficient monitoring and evaluation system that will help achieve and document progress towards results-based ADB disbursements.	PPC, PMU	2016-2022
Results Area 3—National green policy, support and oversight			
Weaknesses in data, evidence and practice base for the GoV's Green City Policy planning and implementation.	GoV and ADB to agree on the following: <ul style="list-style-type: none"> ▪ Consultations and dialogue on policy formulation, institutionalization, and implementation of improved, results-focused M&E systems. ▪ Establishment of a Program-specific monitoring, verification and evaluation 	PPC, PMU MOC, MONRE	2016-2022

⁹⁷ TABMIS is a treasury and budget management information systems developed for the MOF to reach the target of modernizing the stages of managing the national budget: estimating, dispersion, reporting, facilitating the responsibility of explaining the budget, and improving transparency in public finance management. It involves four divisions of the MOF, 700 provincial offices of finance and 40 ministerial institutes. The system can be accessed by 5,200 to 15,000 end-users.

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
	<p>system for the Program using strengthened safeguards, procurement and financial management systems.</p> <ul style="list-style-type: none"> ▪ Establishment of a mechanism for documenting indicators of Green City development and best practices ▪ Establishment of capacity to train, and monitor and evaluate performance in Green City procurement, financial management, and asset management within the PMUs and implementing agencies 		
Results Area 4 – Green City Financing Mechanism (GCFM)			
Limited capacity to monitor and/or evaluate financing of Green City investments, including funds mobilisation, channelling entities staffing and capacities, disbursement and credit quality.	<p>GoV and ADB to agree on the following:</p> <ul style="list-style-type: none"> ▪ Establishment of capacity at VDB to monitor and/or evaluate fund sourcing, appraisal, credit quality, and development of green financing instruments ▪ Establishment of capacity at VDB to monitor the performance of provincial and city project development and financing agencies in the same areas as above. 	VDB, PPC, DPI	2016-2022

Source: PPTA Consultants

6.2 Fiduciary Systems

The fiduciary systems assessment was conducted to determine the degree to which the systems of the GoV and the three Program provinces and cities will be able to manage fiduciary risks and provide reasonable assurance that the RBL funds will be used for their intended purposes, with due consideration for economy and efficiency.

The fiduciary systems assessment covers the financial management, procurement, and anticorruption systems. The assessments include reviews of:

- Applicable rules and procedures.
- Capacity of the relevant agencies.
- Agencies' practice and performance in case of ongoing programs.
- Proposed risk mitigation measures.

6.2.1 Financial Management System

Every second year, the international development banks in Viet Nam conduct a joint review of the performance of their lending operations, which looks in detail at obstacles to use of the country's Public Financial Management framework, procurement and safeguard systems. In February 2015, a Joint ODA Portfolio Performance Review meeting was held which documented some change in performance by the GoV as well as making some recommendations.

In May 2014, the World Bank issued its program appraisal document on a proposed credit of US\$250 million equivalent to the GoV for the results-based national urban development program in the northern mountains region which included a fiduciary systems assessment. A Viet Nam Fiscal Transparency Review: Analysis and Stakeholder Feedback on State Budget Information in the Public Domain was also issued by the World Bank in May 2014. A Country Financial Accountability Assessment (CFAA) was done in 2007, but this does not appear to have been made public. The MOF currently has details of its progress in implementing CFAA 2007 recommendations on its internet site updated to November 2011.

The PPTA team fiduciary risk assessment was conducted in May – August 2015 through an analysis of the above documents, examination of financial statements tabled by implementing and executing agencies and interviews of officials at the Ministry of Finance, the Bureau of Technical Infrastructure at the Ministry of Construction and the Ministry of Planning and Investment, the Office of the GoV Inspectorate as well as officials at Provincial Departments of Finance and Departments of Planning and Investment and those of other relevant City Offices.

The February 3rd 2015 meeting of the Joint ODA portfolio performance review reported problems with counterpart funding, contractor capacity and differences in processes and procedures between Viet Nam and the international development banks. The report went on to make recommendations on simplification of administrative procedures in accordance with international practices, and enhancing preparation, negotiation and conclusion of ODA financed projects.

The May 2014 World Bank fiduciary systems assessment on the Results-Based National Urban Development Program in the Northern Mountains Region concluded on Financial Management Systems indicated that ...

Annex 1: “GoV systems for financial management in the Program require strengthening, particularly to: (a) enable cities to effectively absorb the significant additional funding for infrastructure injected by the Program; (b) introduce the performance-based transfer system, which demands enhanced planning and management performance by participating cities; and (c) strengthen internal audit, especially at the city level”...

The World Bank fiscal transparency review in 2014 noted that financial reports did not break expenditures down to even split between salary and wages and goods and services.

ADB’s current and expanded financial management assessment questionnaire—as at June 2015—was used by the team to facilitate analysis of the three Provincial Departments of Planning and Investment and Departments of Finance, and the three implementing agencies—CPC in Ha Giang, PPU in Hue, and ODA Board in Vinh Phuc. On capacity and experience of likely project management staff, the situation in each province and city is quite variable even within provinces. In each agency, there will be at least some staff with useful experience, but in some cases those likely to be managing ODA disbursement may not have relevant experience or training, this being the first availment of ADB financing. The PPTA team financial management assessment included a review of the accounting and reporting system, internal and external auditing arrangements, fund disbursement procedures, and information systems.

Existing fund flow mechanisms will not be used for this RBL program. Consultations with national officials have indicated that ODA financed activities will involve an initial receipt of funds at MOF account at the State Bank of Viet Nam managed by the External Finance and Debt Management Department at MOF. Under the RBL modality, the MOF would endorse a withdrawal application from a province and apply its procedures for disbursement of ODA funds upon receipt of favorable results and recommendations from the verification protocol conducted by a verification agency and the Provincial State Treasury report on validation of expenditures. The fund disbursement process commences with the processing of the relevant documentation from the Project Management Unit at the Provincial Departments of Planning and Investment and approval by the People’s Council, Provincial People’s Committee and Provincial State Treasury. Funds in US\$ would be credited to the relevant program accounts at the commercial bank acceptable to MOF as requested by the PMUs. Counterpart funds from the provincial budget will be released from the Provincial Treasury account. When claims for payment have been prepared in accordance with all procedural requirements, either the commercial bank or State Treasury will disburse the proceeds depending on the fund source.

In some cases, internal controls to be applied in managing the funds flow will include TABMIS, an information system which provides one framework across GoV including provinces, cities and other provincial entities such as the DPI for financial reporting. The PMU or implementing agency of Vinh Phuc is using the Management Information System for Accounting (MISA) software while the Thua Thien Hue and Ha Giang PMUs use an excel-based system.

Internal Audit is at an early stage of adoption in Viet Nam. Internal auditors are in place in state owned enterprises, but very few have been appointed in government. Initially the oversight of this function was with State Audit, but this has been moved to the Ministry of Finance in recent years. Most ministries have

an Inspectorate function rather than an office of internal audit. The Office of the General Inspectorate runs an Institute for training civil employees with major function of inspection as an internal audit tool. According to the MOF response to the CFAA 2007 recommendations...

"The MOF Inspectorate Department is cooperating with World Bank to implement the Project of "Internal Audit Capacity Building" for the MOF Inspectorate with main contents as follows: Evaluation on international procedures and process applied at the moment; Establishment of risks management"...

The Program will use consultancy services for reviewing current internal control and inspection procedures and creating a handbook on internal audit and risk management.

The key public documents of the accounting and financial reporting process in Viet Nam are the approved budget, quarterly budget, implementation reports, end of year financial statements, and external audit reports. Quarterly reports on ODA project implementation and national counterpart fund spending are prepared; but these do not appear to be placed on the MOF internet site.

Article 65 of the Law on The State Audit deals with obligations of audited entities which include ...

"to formulate and send fully and promptly financial statements and reports on final settlement of investment projects; revenue and expenditure plans; reports on the situation of execution and final settlement of budgets to the State Audit when requested"...19. The Accounting Law also imposes reporting requirements on budgetary entities in Article 29 where it says that financial statements of the accounting units engaged in State budget collection and spending activities will include.

- "a) the accounting balance sheet;
- b) the revenue and expenditure report;
- c) the written explanation on the financial statements; and
- d) other reports as prescribed by law"...

To date, it appears that reporting templates have not been developed which would disaggregate expenditure in a manner more consistent with international accounting standards which generally require both a functional and economic classification of expenditures.

The Country Financial Accountability Assessment 2007 included recommendations to ...

"Update the Accounting Law with the purpose to: (i) clearly define institutional responsibilities for government public accounting; to identify accounting and auditing regimes for enterprises; accounting and auditing standards (both internal and independent auditing); internal auditing instruction and supervision, and government financial reporting; (ii) assign responsibility for financial reporting in government level to the State Treasury and suggest to the government to summarize and publish annual financial statements; (iii) cover high level requirements, frameworks and principles on accounting, financial management, financial reporting and auditing; the detailed requirements will be covered in subordinate regulations or regulated in accounting and auditing standards, and (iv) replace outdated provisions and provide a more comprehensive up-to-date provisions with the aim at supporting to the TABMIS and PFM reforms implementation.

In its latest response to these recommendations, currently placed on the internet, the Ministry has said..."Calling for TA to review the implementation of Accounting Law and its guidance documents". The existing draft of the Revised Accounting Law is targeted to take effect in July 2016 in time for the budget exercises for fiscal year 2017 but has not been passed. International Financial Reporting Standards (IFRS) issued and regulated by the International Accounting Standards Board (IASB) guide the preparation and presentation of financial reports. Vietnam uses IFRS as a basis for its own system, the Vietnamese Accounting Standards (VAS), yet there are key differences between the two which remain under discussion at the National Assembly.⁹⁸ The current Chart of Accounts used by the government agencies in various levels are in **Appendix 15**.

⁹⁸ <http://www.vietnam-briefing.com/news/ifrs-vas-part-1-introduction-vietnamese-accounting-standards>, June 2015.

The Revised State Budget Law of 2015 has been passed and will be effective on January 1, 2017 to allow an appropriate transition period. The new Budget Law of 2015 will take effect in 2017 allowing transition from the Budget Law of 2002. The World Bank Study on Revision of Viet Nam's State Budget Law contained many recommendations to improve the State Budget Law, including (i) clarification of issues which included the independence of the State Audit; (ii) addition of important provisions where needed; and (iii) introduction of latest developments to promote a performance-based budget system.

The notable changes introduced through the new law are as follows:

- Publication of detailed draft annual state budget, provincial/district/commune budgets to increase transparency.
- Inclusion of the presentation of the two-stage budget approval, which is at the provincial people's committee and at the National Assembly levels.
- Deviation from spending revenues above budget without legislative approval.
- Revision of fiscal rules to be applicable to national and local levels of government.
- Calculation of debt ceilings using decentralized revenues and percentage of revenues to be retained by local government/province in lieu of capital expenditures.
- Establish the independence of the State Auditor as government auditor, and not act as auditor for the National Assembly;

The General State Audit consultation confirmed the following:⁹⁹

- Provincial government has monitored and accounted expenditures based on the Chart of Accounts of the Accounting and State Budget Laws, which is very detailed. The expenditure items of investment projects are also regulated in the Law on Construction, and the guidance documents on management of construction costs.
- Provincial government's financial reports are based on State Budget Law, Accounting Law, and its guidance documents.
- The audit planning and implementation of State Audit have to comply with the Law on State Audit, State Audit Standards and Procedures of State Audit.
- The audit is often conducted after the final settlement report or the report on the implementation progress of the entity.
- State Audit's functions are to audit the financial statements, compliance, and activities of entities and organizations which are managing state budget proceeds, state-owned cash and assets. State Audit has the right to commit/hire (private) auditing firms to audit these above-mentioned entities; State Audit is responsible for the accuracy of the data, documents and audit conclusions done by (private) auditing firms.
- Audit reports of State Audit confirm the accuracy and truthfulness of financial reports, budget final settlement report; assess the compliance with the Law, as well as economic feasibility, effectiveness and efficiency in management and usage of state budget proceeds, state-owned cash and assets.
- On the audit and guarantee activities for Result-based Programs financed by WB, it is expected that State Audit is the Independent Verification Agency.
- Verification procedure used in the PforR Rural Water Supply and Sanitation in Red River Delta Region involved the PMU using its monitoring and evaluation system to (i) collate the results guided by the disbursement indicators; (ii) summarize reports for State Audit to verify obtained results for disbursements and ensure that all of the procedures and actions agreed in the project documents have been complied. State Audit conducts field work, interviews, review of reports on quality and quantities accomplished, and prepares recommendations to MOF.

⁹⁹ Emailed Response of State Audit Office to questions posted by PPTA Consultants received 6 July 2015.

Provincial governments' financial reports, reviewed by the PPTA team, are prepared in a format which reflect expenditures as overly aggregated and do not facilitate meaningful analysis. Total expenditure in all three Provinces, for example, is only split into capital expenditures, loan repayments, recurrent expenditures, expenditures from resource transference, and other expenses.

This assessment of accounting and financial reporting concluded that provincial government financial reporting tends to be done at too high a level of aggregation and that this should require more detailed line item reporting or economic classification of expenditures. In addition, as governments may be accustomed to receiving quarterly high level reports in an untimely manner, this might be best addressed by requiring more detailed monthly reporting, at least internally, so as to facilitate the completion of more timely and comprehensive quarterly reports for Provincial management and the Provincial Peoples Committee. The problem with these reports may simply be that more appropriate templates have never been tabled for Provincial Government and City officials to consider producing.

Subject to the preparation of more timely comprehensive financial reports, the program team's assessment of the financial management system and the degree to which it manages fiduciary risks and provides a reasonable assurance that Program funds will be used appropriately, is that the procedural framework provides some confidence, but the rate of incidence of non-compliance with that procedural framework causes some concern. The fiduciary assessment of the financial management system also finds that accountability and transparency is less than optimal because of the detail not included in financial reports.

The assessment concluded that (i) the Manual for Financial Policies and Procedures for the PMUs needs to be revised to include the RBL policies and procedures; (ii) the financial management capacity of the implementing agencies is adequate for the implementation of the Program in some cases; (iii) additional local expertise in procurement and financial management will be required; (iv) training will be required in RBL procedures in disbursement, project management, accounting and financial reporting systems, and (v) appropriately qualified staff should be recruited during Program implementation as needed.

Enhanced internal controls are required in the form of more detailed and more frequent financial reporting to facilitate the Program financing's efficient and effective outcomes. More frequent detailed reports circulated to more officials will heighten opportunities to address leaks, fraud and corruption. An international and national consultant will be appointed along with a dedicated financial management staff member within the PMU to strengthen the system and implementation. Capacity development will be provided to all staff of the PMU to address these aspects and will strengthen the internal controls. The staff member will have the responsibilities of an internal auditor with training at the General Inspectorate Institute.

In accordance with the views of the Departments of Finance and Planning and Investment of all provinces, training programs are planned to strengthen financial management capacity through active workshops in procurement requirements, accounting, financial reporting, and internal audit. In Ha Giang, the Department of Finance plans to teach commune budget accounting; training courses will focus on training in budget, public property, and administrative management.

The Program will require submission of annual audited program financial statement reports after the close of the fiscal year. It requires receipt of the annual audit reports in English within six months after the close of the fiscal year.

Overall financial management risks, their rating and proposed mitigation measures are shown as **Table 6-4**.

Table 6-4. Financial Management Risks

Risk Type	Risk Description	Risk Rating	Mitigation Measures
Inherent risk ^b			
1. Country-specific risks	Policy change	Moderate	Consultation on design
2. Sector/program-specific risks	Projects inappropriate	Low	Consultation on design
Overall inherent risk		Low	
Control risk ^c			

Risk Type	Risk Description	Risk Rating	Mitigation Measures
1. Internal controls	Non compliance	Moderate	Training programs
2. Funds flow	Non compliance	Moderate	Training programs
3. Accounting and financial reporting	Non compliance	Moderate	Increase reporting detail and frequency
4. Independent audit	Not timely or accurate	Moderate	Training / contracting out
Overall control risk		Moderate	
Overall Risk		Moderate	

Source: PPTA Consultants' assessment.

To encourage compliance with the financial management and procurement policies and regulations, the PMUs, the provincial and city officials and staff members must practise full transparency to the general public in all their financial and procurement transactions. To entice community participation and interest in the Program, the knowledge sharing and communication plan must be in place to ensure community awareness of the benefits to be derived from the Program.

At the provincial level, in Ha Giang, Thua Thien Hue, and Vinh Phuc, the key departments certifying the degree to which the DLIs have been achieved will be the Department of Planning and Investment for technical progress or accomplishment while the respective Provincial State Treasury will confirm funds disbursements and utilization. All these supporting documents to a withdrawal application will be submitted to the independent private sector verification agency, an accounting firm which will certify achievement of DLIs.

6.2.2 Financial Management Assessment of Ha Giang, Hue City and Vinh Phuc Provinces

Introduction

The Financial Management Assessment (FMA) of the provinces and the city PMUs has been prepared in accordance with ADB's Guidelines for the *Financial Management and Analysis of Projects*¹⁰⁰—the Guidelines—and the publication *Financial Due Diligence A Methodology Note*.¹⁰¹ This FMA incorporates the Financial Management Internal Control and Risk Management Assessment required by the ADB guidelines.

The FMA considers various government agencies in their role as the proposed Executing Agency (EA) and/or Implementing Agency (IA) for the subprojects under the Program. The activities undertaken by the PPTA team included a review of available documents, an interview with the Department of Finance of each province, and discussions with the each PMU based in the cities. The provinces will procure services for operations and maintenance, and not appoint the utility and urban environmental companies for said services as traditionally done. There are ongoing developments on the privatization of utility and urban environmental companies. Some URENCOs have converted to joint stock companies, with private sector stockholders and government retaining a majority ownership of 51%. Financial management assessment questionnaires were submitted to the provincial Departments of Finance and the PMUs, and additional questions under an expanded FMA questionnaire were responded to through interviews. The completed questionnaires are in **Appendix 15**.

This assessment reflects developments and agreements related to the respective roles of the PMUs and the PPCs in the technical and financial investment components of the Program. The Program's funds flow arrangements preferred by the provinces will not use an imprest account for the loan and grant proceeds. The PMUs will open separate accounts at a commercial bank for the ADB loans—ADF and OCR—and the UCCRTF grant. The EAs and PMUs opted for the release of funds to their Program accounts in US dollars while that for counterpart funds will be opened with the respective provincial state treasury. With this option, the training in management of foreign exchange risk is essential. The debt

¹⁰⁰ *Financial Management and Analysis of Projects*. ADB. 2005. Refer to page 14 of Knowledge Management Addendum for more information on the Financial Management Assessment.

¹⁰¹ *Financial Due Diligence A Methodology Note*. ADB. 2009. Refer to page 3 for more information on the Financial Management Assessment.

ceiling, capacity to borrow, sustain financial stability as well as repay loans based on historical and forecasted income statements are reflected in Chapter 9 of this report.

Findings and Conclusions

Management and Skills Capacity

Viet Nam is one of the largest recipients of concessionary ADF lending and also utilizes OCR funds specifically for infrastructure projects. Major Program implementation issues have been covered in the Ministry of Finance (MOF) Circular No. 108/2007/TT-BTC dated September 7, 2007—*Guiding the Financial Management Mechanism Applicable to ODA Programs and Projects*. The circular covered previous orders, including:

- Regulation on the Management and Use of Official Development Assistance (ODA) sources—Circular No. 04/2007/TT-BKH of July 30, 2007.
- Regulation on the Management of Foreign Loans and Debt Payment—Circular No. 9/2004 and Circular No. 12/2014/Tt-NHNN.
- Detailing and Guiding the Implementation of State Budget Law—Circular No. 97/2008/TT-BTC of October 28, 2008.
- Defining the Functions, Tasks, and Powers of the Ministry of Finance—Decree No 215/2013/NĐ-CP dated 23/12/2013.

This EAs and IAs of ODA-funded projects adhere to the guidelines to ensure timely provision of counterpart funds, compliance to documentation requirements, submission of supporting documents to validate program expenditures, and diligent record-keeping to facilitate required audit of project accounts.

Particular weaknesses encompass a lack of knowledge and experience in the implementation of ADB-funded projects for EAs and PMUs of Ha Giang, Thua Thien Hue, and Vinh Phuc. Although the provinces have undertaken previous loans and /or grants from the MoF and other donors, the proposed results based investments will be their first experience where fund releases will be tied to the accomplishment of disbursement linked indicators (DLIs). Accordingly, capacity development that focuses on adherence to appropriate financial management policies and procedures, as well as guidance in the achievement of DLIs is recommended. To pave the way for private sector participation, a PPP approach will be explored for some subprojects. The cities have not had much experience of PPPs and require technical assistance in the assessment and analysis of mutually beneficial partnerships with the private sector. Capacity development will be needed for the EAs, IAs and PMUs to acquire knowledge and confidence to undertake subproject/s through PPP arrangements.

In general, adequate knowledge and skills in project management, financial management, financial analysis, management accounting, and construction supervision are prevalent among the officers and staff of the PMUs. The provinces have undertaken development projects funded by government. However, it is their first time to be part of an ADB program, and to undertake a results based lending program and they will require training on meeting DLIs. For Ha Giang, it will be their first ODA financed project. Vinh Phuc (Vinh Yen City) and Thua Thien Hue (Hue City) have worked with donors, such as the World Bank, and JICA through their respective PMUs. Their involvement had been in project conceptualization, budget preparation, detailed planning, procurement of goods and services, infrastructure works, project supervision, monitoring, and evaluation. They are equipped with appropriate IT hardware, and Vinh Phuc PMU utilizes a software program. However, linked financial and physical progress reporting is not yet in place. Accounting and finance departments are functioning efficiently with the use of an electronic accounting system based on that prescribed by the GoV. Nevertheless, Ha Giang and Hue PMUs are using Excel spreadsheets to generate reports.

Risk Analysis

A financial management internal control assessment was conducted.¹⁰² The risk-assessment approach is based on International Standards on Auditing 400: *Risk Assessment and Internal Control*¹⁰³ and will be augmented once agreement is finalized on the disbursement arrangements. The following financial risks are based on existing circumstances, staffing and procedures, and include recommendations for risk mitigation measures, as needed. The control risks of the three provinces are summarized as **Table 6-5** based on the responses to the questionnaires provided to them. **Table 6-5** outlines the risks and the proposed mitigation measures, capacity building needs, and the actions to be undertaken at the commencement, and during implementation of the Program for Vinh Phuc, Thua Thien Hue, and Ha Giang provinces.

Table 6-5. Risk Assessment Summary—Provincial DOF and PMU/ODA Board for Vinh Phuc, Thua Thien Hue, and Ha Giang

Risk Type	Risk Assessment ¹⁰⁴	Risk Description	Remarks/Mitigation Measures
Executing and Implementing Agencies ¹⁰⁵			
Vinh Phuc and Thua Thien Hue Provinces	L	Financial management policies and procedures of the EA and the IA are appropriate for managing traditional ODA borrowing but will need revisions to incorporate the requirements of SCDP and the RBL.	The Manual on Financial Policies and Procedures prescribed by the MOF in accordance with the Accounting Law is strictly observed. Compliance with the manual is monitored closely by the PPC, PMU, State Treasury, and State Audit. The financial reporting and audit arrangements are clearly defined and properly implemented. The accounting personnel are able to handle the requirements of project accounting and financial reporting. Additional personnel will be hired as needed for SCDP. The PPCs plan to revise the manual to include RBL policies and procedures, specifically those relevant to the DLIs and verification protocol of SCDP. Existing and new personnel will be trained on the revised manual.
Ha Giang Province	M		The personnel of Ha Giang Province and the PMU handle the project accounting and financial reporting. The province is participating in the Community-Based Poverty Reduction Project financed by the International Fund for Agricultural Development (IFAD). However, its participation through the DOF is limited to a membership at the Project Steering Committee, and to releasing the counterpart funds. The PMU, comprising CPC officials and staff, has no experience in ODA-funded projects but has indicated it will hire additional personnel as needed for the Program. The PPC aims to revise the manual to include RBL policies and procedures, particularly those related to the DLIs and verification protocol of SCDP.
Vinh Phuc, Thua Thien Hue, and Ha Giang Provinces	L	Instances of fraud, corruption, and waste or misuse of SCDP resources may not be monitored and reported to the offices or groups	The 2005 Anti-Corruption Law and the 2011 Laws on Complaints and on Denunciation enable citizens to submit complaints on fraud and corruption, among others, to the People's Committees at the city and provincial levels. Procedures for reporting suspicions or incidence of fraud and corruption are properly

¹⁰² Financial Management Questionnaire (FMAQ) 2015 and Financial Management Assessment. ADB. 2010.

¹⁰³ Financial Management and Analysis of Projects. ADB. 2005

¹⁰⁴ Risk Assessment: H = High, S = Substantial, M = Moderate, L = Negligible or Low

¹⁰⁵ The Province of Vinh Phuc's Executing Agency for the SCDP Program the Provincial People's Committee. Its implementing agency which will serve as the Project Management Unit (PMU) is the Official Development Assistance (ODA) Board.

Risk Type	Risk Assessment ¹⁰⁴	Risk Description	Remarks/Mitigation Measures
		concerned.	documented and referred to the inspectorate through a designated staff member of the PMU. The officer involved receives and records the reports filed by citizens and documents the results of the investigation by the Inspectorate. The PMUs will develop and implement an orientation program for its staff and the SCDP beneficiary communities on these policies procedures. The PMUs also intend to prepare a community awareness program for SCDP to encourage the active participation of communities in subproject implementation. In addition, there is a parallel "complaints system" at the Government Inspectorate (GI) ¹⁰⁶ offices under the line ministries and departments at the central and provincial levels.
Funds Flow, including disbursement of loans, grants, and counterpart funds Vinh Phuc and Thua Thien Hue Ha Giang	M M - S	The system of disbursing RBL loans through the Provincial State Treasury in local currency eliminates foreign exchange risks by the provinces. Since the ADB loans will be passed in US dollars, there will be a foreign exchange risk.	The provinces have requested that RBL disbursements for SCDP be channelled to them in US dollars through commercial banks. The PMU staff will be trained in foreign exchange risk management, including hedging, to better prepare them for managing the proceeds of the ADB loans.
Vinh Phuc, Thua Thien Hue, and Ha Giang	M	Releases of counterpart funds may be delayed or there could be insufficient annual budgetary allocations for the counterpart funds.	Within each province: the PPC's approval of the feasibility study, at the recommendation of DPI, constitutes the government's endorsement of the counterpart funds required for SCDP. Based on the PPC's approval, the DOF in close coordination with DPI, will include in the annual provincial budgets, the planned SCDP disbursements over the implementation period. Should additional funds be required during the year, a supplementary budget will be prepared and submitted for approval to DPI, the People's Council, and the PPC. The PMU staff will be trained to prepare and monitor projected disbursements against the annual budgetary allocations for counterpart funds to ensure the timely receipt of adequate counterpart funds for SCDP.
Vinh Phuc and Thua Thien Hue Ha Giang	L M	The cost allocation to various funding sources such as the ADB loans, UCCRTF grant, and GOV counterpart funds may not be properly monitored and accounted for since they are not managed through separate accounts.	Separate accounts will be maintained by the PMU for all Program components financed by ADB—through ADF and OCR, the UCCRTF, and the GOV. They will be examined annually by an independent auditor to be contracted by the PMU. The State Treasury will review and validate the utilization of funds, including adherence to the provisions of the loans and grant agreements. Additional staff members will be hired by the PMU/CPC to efficiently deliver required financial

¹⁰⁶ The Government Inspectorate (Vietnamese: Thanh tra Chính phủ) is a ministry-level agency in Viet Nam under the Ministry of Finance. It exercises the function of state administration of inspection, citizen reception, complaint and denunciation, settlement, and anti-corruption throughout Viet Nam. It also conducts inspections, settles complaints and denunciations, and combats corruption in accordance with relevant laws.

Risk Type	Risk Assessment ¹⁰⁴	Risk Description	Remarks/Mitigation Measures
			monitoring reports.
Staffing Vinh Phuc, Thua Thien Hue, and Ha Giang	M	The current organization and staffing of the PMU including the lines of supervision, limits of authority, and statement of duties and responsibilities of each staff do not sufficiently address the requirements of the RBL.	Although there are government standards covering the overall administration and supervision of officers, managers, and staff comprising the PMUs, incorporating the tasks, responsibilities, and levels of authority to match the requirements of the RBL will be essential. The financial management structure and staffing of the PMUs will be reviewed periodically and strengthened, if necessary, based on needs of the SCDP and RBL.
Accounting Policies and Procedures Vinh Phuc and Thua Thien Hue Ha Giang	L M	The current accounting policies and procedures do not adequately cover the financial reporting requirements of SCDP and the RBL.	The Project Support Consultants will review and revise the Manual on Financial Policies and Procedures to integrate policies and procedures relevant to the SCDP and RBL. The consultants will pay particular attention to the requirements of achieving DLIs and complying with the verification protocol. Existing and new PMU personnel will be trained on the revised manual.
Budgeting System Vinh Phuc and Thua Thien Hue Ha Giang	M L	Budgeting for SCDP and the RBL may not take into account the revised procedures and debt limits allowed by the newly amended State Budget Law of 2015, which will be effective in 2017.	The PMUs of Vinh Phuc and Thua Thien Hue have been working with MOF and the PPTA consultants in determining the implications of the newly approved State Budget Law of 2015 on the SCDP annual budgetary requirements and disbursements. The program implementation schedule, disbursement plan, and procurement schedule have been aligned to ensure that loan availments stay within the estimated annual debt ceilings of Vinh Phuc. The analysis has taken into account that the province has other planned loans from the World Bank (\$150 million) and OPEC Fund for International Development (\$20 million) over the same period. Similarly the implications on the debt ceiling of Thua Thien Hue over the implementation period considering its other planned borrowings has been taken into account. Based on Ha Giang's total projected decentralized revenues for 2016-2020, the \$4 million ADB ADF loan to be passed on to the province as a loan is within its estimated annual debt ceilings.
Vinh Phuc, Thua Thien Hue, and Ha Giang	M	There is no permanent internal audit capacity organic to the PMU.	The PPC/PMU will be subjected to intermittent internal audit through the Office of the General Inspectorate which handles the state functions of inspection, citizen reception, complaint and denunciation settlement, and anti-corruption throughout Viet Nam. In addition, the PMU will appoint a staff member who will be tasked with internal audit responsibilities. Arrangements will be made by the PMU for the appointed staff member to be trained by the Office of the General Inspectorate Institute.
External Audit Vinh Phuc	L	External audits are usually not conducted on time because of delays in the preparation and submission of financial	The Vinh Phuc PMU uses the electronic Management Information System for Accounting (MISA) which facilitates the preparation of its annual financial statements and accompanying working papers.

Risk Type	Risk Assessment ¹⁰⁴	Risk Description	Remarks/Mitigation Measures
Thua Thien Hue	M	statements by the provinces.	The PMU of Thua Thien Hue will invest in a customized software, compatible with TABMIS to facilitate the preparation of annual financial statements and accompanying working papers.
Ha Giang	S		<p>The Ha Giang PMU understands the need to shift to an electronic financial management system, and has requested that such a system upgrade be made part of their capacity building under the Program.</p> <p>An external auditor, accredited by the GOV/MOF and acceptable to ADB, specifically for RBL, will be engaged to audit the SCDP financial statements of the three provinces.</p>
Reporting and Monitoring		The financial monitoring system does not include the required reports of ADB and the GOV on SCDP and the RBL.	The financial monitoring system will be revised to include the Program components and expenditures linked to implementation forecasts and physical progress, which will signify achievement of the DLIs.
Vinh Phuc	L		For Vinh Phuc, the revision of the system will entail an upgrade of the current electronic MISA-based financial management system to allow the generation of the relevant SCDP and RBL reports.
Thu Thien Hue	M		The revision of the system will entail an investment by the Thua Thien Hue PMU in an electronic project management system, which will allow monitoring and evaluation of financial and technical progress, and the facilitated generation of the relevant SCDP and RBL reports.
Ha Giang	S		The revision of the system will also necessitate Ha Giang PMU's investment in an electronic project management system which will facilitate monitoring and evaluation of financial and physical progress, and the generation of relevant SCDP and RBL reports.
Overall Control Risk		The financial management system needs to be revised to incorporate the requirements of the SCDP and RBL. Staff and staff skills will have to be augmented through training and/or technical assistance support.	The Manual on Financial Policies and Procedures, needs to be revised to respond to the disbursement, accounting, audit, and reporting and monitoring requirements of the SCDP and RBL—particularly to incorporate those pertinent to the achievement of the DLIs and compliance with the verification mechanisms to be set in place. Training and capacity development of the PMU staff will focus on the revised financial policies and procedures resulting from the SCDP and RBL, foreign exchange risk management, Program budgeting, inspection skills in lieu of internal audit, and Program financial reporting and monitoring.
Vinh Phuc	L – M		For Vinh Phuc, the financial management system will be upgraded to one that is compatible with TABMIS, and supportive of the SCDP and RBL requirements.
Thua Thien Hue	M	The financial management system is still Excel-based and does not support TABMIS, thus, requiring	Shift to an electronic financial management system that is compatible with TABMIS, and supportive of the SCDP and RBL requirements, will ensure efficient

Risk Type	Risk Assessment ¹⁰⁴	Risk Description	Remarks/Mitigation Measures
Ha Giang	M - S	<p>an upgrade to facilitate SCDP and RBL reporting and monitoring. Additional staff will be engaged during program implementation.</p> <p>The PMU still relies on an Excel-based financial management system which has to be shifted to an electronic system to facilitate accounting, financial reporting and monitoring and evaluation.</p>	<p>financial reporting and monitoring.</p> <p>An electronic financial management system compatible with TABMIS, and covering SCDP and RBL reporting requirements will form part of the PMU investment and capacity building program.</p>

ADB = Asian Development Bank; ADF = Asian Development Fund; DLI = Disbursement Linked Indicator; DOF = Department of Finance; DPI = Department of Planning and Investment; EA = Executing Agency; GI = General Inspectorate; GOV = Government of Vietnam; IA = Implementing Agency; ISO = International Standards Organization; MISA = Management Information System for Accounting; MOF = Ministry of Finance; OCR = Ordinary Capital Resources; ODA = Official Development Assistance; OPEC = Organization of Petroleum-Exporting Countries; PMU = Project Management Unit; PPC = Provincial People's Committee; PPTA = Project Preparatory Technical Assistance; RBL = Results Based Lending; SAV = State Audit of Vietnam; SCDP = Secondary Cities Development Program; UCCRTF = Urban Climate Change Resilience Trust Fund;

Source: PPTA Consultants

Need for Technical Assistance

The financial management assessment indicates the need for technical assistance mainly to develop the capacity of the PMUs to respond to the requirements of the Program and RBL. The technical assistance will focus on: (i) revising the Manual on Financial Policies and Procedures to reflect the accounting, reporting, and monitoring requirements for the achievement of DLIs, and the verification mechanisms; (ii) strengthening budget preparation and oversight of the Program accounts; (iii) training on foreign exchange risk management; (iv) adoption of inspection as an internal audit tool; (iv) upgrading or a move to the use of electronic accounting software by the PMUs; and (v) financial audit process and requirements.

The technical assistance will also help delineate the roles and responsibilities of the PMUs and provincial agencies such as DOF, DPI, and the State Treasury in the implementation of the SCDP and RBL. This will, among others, facilitate the coordination of tasks to be jointly or solely undertaken by the agencies concerned in subproject implementation, and fund disbursement. There is a need to clearly define the planned procurement of services for operation and maintenance of completed Program assets. Such a policy will generally be embodied in a PPC decision, and will be guided by the DOC.

Risk Mitigation Actions

The proposed actions for mitigating the financial management risks to the Program are set out below. They are derived from the financial management assessment, and show those to be undertaken by the PMUs at the start of Program implementation and those during implementation. Actions to be undertaken by the PMUs upon commencement of the Program and RBL implementation include:

- Review of the organizational structure, duties and responsibilities of PMU officers and staff, and their corresponding skills to respond to the Program and RBL requirements.
- Draft work plans for PMU personnel to guide and facilitate Program implementation.
- Orientation for officers, managers, and staff of the EA on the Program and RBL guidelines to ensure prompt policy decision making in support of Program implementation and management, financial and physical progress reporting, and procurement policies.

- Training for the concerned officers and staff of the EA and PMU on disbursement arrangements, particularly those relevant to the achievement of DLIs and compliance with the verification protocol.
- Training for the PMU and DOF on foreign exchange risk management.
- Investment in upgraded or new electronic financial management systems compatible with TABMIS with appropriate training on their use.

Actions to be undertaken by the PMU during implementation are:

- Revise the Manual on Financial Policies and Procedures to include RBL policies and procedures, specifically those relevant to the DLIs and verification protocol of the Program. Existing and new personnel will be trained on the revised manual.
- Develop and implement an orientation program on the policies and procedures of reporting suspicions, and/or incidence of fraud and corruption. Orientation will be conducted for the PMU staff and SCDP beneficiary communities.
- Implement a community awareness program for SCDP to ensure the active participation of communities during subproject implementation.
- Training on foreign exchange risk management will be conducted for the PMU staff to better prepare them in managing the ADB loans, which will be channelled to their program accounts in US dollars.
- Procure the services of an independent private sector agency using the TOR prepared under the PPTA to conduct verification on the achievement of DLIs.
- Undertake training on the preparation and monitoring of planned disbursements against programmed annual budgetary allocations for the timely receipt of sufficient counterpart funds for the Program. The training will include the preparation of a supplementary budget for review and endorsement of DPI and DOF to the People's Committee, and PPC for approval, should there be a need for additional counterpart funds.
- Open, maintain, and monitor separate accounts for all Program fund sources from ADB—ADF and OCR, UCCRTF, and the government, which will be subject to an annual review by an independent external auditor.
- Monitor the Program implementation schedule, disbursement plan, and Program procurement plan to ensure total loan balances of each province are within their respective annual debt ceilings. Availments for Vinh Phuc will include those under the planned World Bank and OFID facilities, currently programmed at US\$150 million and US\$20 million, respectively. Other planned borrowings during the implementation period by other provinces will also be considered.
- Appoint a staff member to take on responsibilities of internal audit and arrange for their training from the Institute of Government Inspectorate concerning inspection, citizen reception, complaints and denunciations, settlements and anti-corruption.
- Prepare annual Program financial statements and supporting working papers in a timely manner to prevent delays in external audits.
- For Vinh Phuc, upgrade the current electronic MISA-based financial management system, while Thua Thien Hue and Ha Giang will invest in appropriate electronic financial management system packages. This will ensure the prompt, regular, and efficient reporting of Program financial expenditures and physical progress to the PPC, DOF, DPI, central government agencies, MPI and MOF, and ADB.

Overall Summary Action Plan

Key issues and mitigating actions for improving financial management systems are summarized as **Table 6-6**.

Table 6-6. Summary Program Action Plan – Financial Management Systems Assessments

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Result Area 2—Sustainable infrastructure investments			
<p>Financial Management Risk Assessment.</p> <p>The Manual on Financial Policies and Procedures—the Manual—guiding the PPCs, PMUs, provincial offices of the Department of Finance, Department of Planning and Investment, State Treasury and State Audit do not include the RBL policies and procedures, specifically those relevant to the funds flow arrangements, budgeting, accomplishment of DLIs, and verification protocol of the Program.</p>	<ul style="list-style-type: none"> Review and revision of the Manual, covering monitoring, disbursements of loans, grants, and counterpart funds, financial reporting, and audit arrangements. 	PPCs, PMUs	2016
	<ul style="list-style-type: none"> Devise a methodology for the management of cost allocation to various fund sources such as ADB loans—ADF and OCR, UCCRTF grant, and GoV counterpart funds through separate accounts. 	PPCs, commercial banks, PMUs	2016-2020
	<ul style="list-style-type: none"> Alignment of annual budget requirements, disbursements, procurement schedules, and preparation of supplementary budget requests when needed 	PPCs, commercial banks, PMUs	2016-2020
Result area 3—National green policy, support and oversight			
<p>Capacity Building.</p> <p>The technical assistance needs for the Program include familiarity with the policies and procedures of the SCDP and RBL mechanisms, foreign exchange risk management, use of an electronic financial management system to the necessary monitoring and reporting requirements.</p>	<ul style="list-style-type: none"> Training in the use of the revised Manual on Financial Management Policies and Procedures. 	PPC	2016-2017
	<ul style="list-style-type: none"> Undertake a foreign exchange risk management training course for the PMUs, and concerned finance departments and divisions at provincial and city levels. 	VDB, host commercial banks	2016
	<ul style="list-style-type: none"> Upgrade existing electronic financial management software and excel-based systems at the PMU level to ensure compatibility with the TABMIS system used by DOF, DPI, State Treasury, State Audit and other government ministries. 	PMUs	2016
	<ul style="list-style-type: none"> Training for PMU staff member assigned to receive, document and refer complaints to General Inspectorate. 	PMUs	2016

Source: PPTA Consultants

6.2.3 Procurement

The procurement assessment made by ADB's procurement consultants is summarised in this section of the report, and the full report on the Program's procurement system¹⁰⁷ is presented in **Appendix 16**.

¹⁰⁷ Requirements for the procurement assessment are set out in the following document: Staff Guidance for Piloting Results-Based Lending for Programs, ADB, November 2013, and Staff Guidance for Piloting Results-Based Lending for Programs - Supplementary Appendices, ADB, November 2013

Procurement Profile

RBL programs exclude activities that involve procurement of works, goods, and services under contracts whose estimated value exceeds specified monetary amounts, i.e., high-value contracts. The definition for the high-value contracts is harmonized with the World Bank's program-for-results financing, and may be amended from time to time. Currently the amounts are: US\$50 million for works, turnkey, and supply and installation contracts; US\$30 million for goods; US\$20 million for information and technology systems and non-consulting services; and US\$15 million for consultant services. Based on the proposed subprojects and outline procurement plan, the largest contracts would be far below these thresholds. The nature of the proposed subprojects is principally civil works for roads, drainage and sanitation, flood protection.

Procurement under RBL

The procurement procedure under RBL is substantially different from procurement under conventional ADB projects. ADB's template bidding documents will not be used, and their approval will no longer be required at each stage of procurement. MPI's template bidding documents will be used and bidding will be in accordance with GOV procedures. This presents a substantial advantage to the EAs under RBL since procurement is much simplified.

Objectives of the assessment

The assessment seeks to determine the degree to which the system - through capacity development and implementation support - can provide reasonable assurance that program financing will be used economically, efficiently, and for its intended purposes, based on the commonly accepted good practice principles embodied in ADB's Procurement Guidelines and Guidelines on the Use of Consultants. These principles are:

- *Competition.* Open competition is the default approach, and conditions for other methods are clearly described.
- *Economy and efficiency.* The procurement processes are efficient and lead to optimal results in a balanced consideration of time, costs, and quality.
- *Transparency.* The procurement processes are governed by clear rules that are easily accessible and can be consistently applied. Contract opportunities are advertised widely.
- *Fairness and equal opportunity.* All eligible bidders have an equal and fair opportunity.

Country and Sector assessment

To assess country, sector, and/or program-level procurement regulations, rules, procedures, and arrangements, reference has been made to the country and sector procurement risk assessment prepared by ADB in May 2015¹⁰⁸. The assessment of country procurement system performance is that while Vietnam has a well-developed and mature legal framework, as set out in Procurement Law and related decrees and circulars, implementation is the key weakness. A summary is given as **Table 6-7** of strengths and weaknesses identified in the country procurement system.

Table 6-7. Assessed Strengths and Weaknesses of Country Procurement System

Strengths	Weaknesses
<ul style="list-style-type: none"> • The legal framework for public procurement in Vietnam is based on sound principles • Public Procurement Agency as the key regulatory body is empowered to undertake legislative, oversight and capacity building functions. • The legal framework provides for oversight by multiple agencies. • Information disclosure on public procurement has 	<p><u>Weaknesses in legislative and regulatory framework include:</u></p> <ul style="list-style-type: none"> • Monetary threshold of direct contracting and Prime Minister authority to approve the special selection method in case of special or unique contracts • Requirement of foreign bidders to associate with Vietnamese bidder(s) • Inadequate regulation of conflicts of interest

¹⁰⁸ Viet Nam: Country and Sector Procurement Risk Assessment for Energy, Transport, Agriculture, Education and Urban Sectors, Draft Consultants Report, ADB, May 2015

Strengths	Weaknesses
<p>improved.</p> <ul style="list-style-type: none"> e-Government Procurement system have been established and will continue to evolve Private sector is growing fast but at present is only able to undertake small to mid-sized contracts. 	<ul style="list-style-type: none"> Mandatory usage of one submission two envelopes (1S2E) bidding procedure for all goods and works packages—except very small packages Use of subjective evaluation methodology Lack of independent complaint mechanism Complicated and burdensome administrative approval requirements Annual budget allocation for projects is not aligned with disbursement requirements <p><u>Weaknesses in implementation include:</u></p> <ul style="list-style-type: none"> Uneven compliance with new Law on Procurement (LOP) Excessive reliance on direct contracting Persistent signs of collusion Non-compliance with signed contracts Uneven capacity of procurement staff and lack of robust procurement accreditation system Lack of level playing field between private sector and enterprises fully or partially owned by the State <p><u>Weaknesses in monitoring and oversight include:</u></p> <ul style="list-style-type: none"> Limited use of IT systems to expand competition and transparency and enhance monitoring Gaps in civil service system involving appointment, promotion and rotation of staff Ineffective external checks on decisions of procuring agencies by governmental agencies (e.g. State Audit, Government Inspectorate) and non-governmental entities (e.g. media, civil society organizations)

Source: ADB.

Procuring Agency Organizational and Capacity Assessment

Key observations are that (i) the selected implementing agencies in each city only have experience of procurement of contracts substantially smaller than the likely contracts under SCDP; (ii) the PMUs in each city are recently established and have little track record for project preparation, procurement, and implementation; and (iii) the current PMUs have insufficient staff experienced in procurement and contract management for implementation stage.

Table 6-8. Proposed Implementing Agencies and PMUs

Role	Agency
Executing agencies	Provincial People's Committees of Ha Giang, Thua Thien Hue, and Vinh Phuc
Implementing agencies	DPIs of Thua Thien Hue and Vinh Phuc and CPC of Ha Giang
PMUs	Under <ul style="list-style-type: none"> City People's Committee (CPC) of Ha Giang DPI of Thua Thien Hue province DPI of Vinh Phuc province.

Note: the above implementing agencies and PMUs are as envisaged at the time of the interim mission. This will be updated if required.

Table 6-9. Experience of the Implementing Agencies for Procurement of Similar Contracts

Experience	DPI T. T. Hue	DPI Vinh Phuc	Ha Giang City
Consulting services >US\$0.25 million by competitive bidding	No	Yes	No
Civil works >US\$2.0 million by competitive bidding	No	No	No

Source: PPTA Consultants

System Performance

Assessment was made based on questionnaire surveys, interviews with PMUs, and examination of case studies of procurement of large contracts carried out in the provinces under GOV finance. The findings are that comprehensive systems and procedures as required by procurement law are in place and are observed. Procurement is carried out promptly in accordance with the stipulated timelines, with contract award almost always within 2 months of bid submission. Contract management results in no major issues, with value of variations generally less than 10% and low incidence of claims and disputes. Delay in construction is generally caused by difficulties with land acquisition and resettlement, or by delayed finance. Audits have uncovered incidences of small overpayment, often arising out of differences of opinion on contract interpretation, but have not led to findings of fraud, corruption or criminal investigation. There is no established system of linkage whereby incidences of red flags in procurement or contract administration trigger an audit or investigation. There are no cases where contractors have been debarred. In accordance with the findings of the country assessment, effectiveness of implementation of the system remains the key weakness. The principle weakness is failure to detect and prevent the persistent practice of award of contracts to a pre-selected bidder, either due to collusion amongst bidders, or collusion including both bidders and the procuring agency. Patterns are similar to those seen in the country assessment, and in procurement under many ADB financed projects, with contract award prices consistently within a few percent of the approved cost estimate—9 out of 11 case studies were within 2%, and low number of responsive bids—9 out of 11 case studies had only a single responsive bid.

Market Capacity

Research on capacity of contractors in the three provinces was carried out by (i) survey of contractors with the assistance of the PMU staff, and (ii) review of ADB's database of contract awards over the past 10 years—awarded in 2005 – 2014. The findings are that (i) Vinh Phuc is very close to Hanoi and has no constraints on availability of contractors or consultants. Contracts of all sizes and scope should be able to attract sufficient participation. There are three contractors in Vinh Phuc with average annual construction turnover (AACT) over the past three years exceeding VND 150 billion (US\$ 7 million), and three contractors with AACT in the range VND 50-150 billion; (ii) Hue is relatively close to Danang and there are few constraints on availability of contractors or consultants. There are three contractors in Thua Thien Hue with AACT over the past three years exceeding VND 200 billion (US\$ 9 million)); (iii) Ha Giang is geographically remote making mobilisation of equipment and resources from other provinces expensive. There are three contractors in Ha Giang with AACT over the past three years around VND 150 billion (US\$ 7 million), and three contractors with AACT in the range VND 20-60 billion.

Procurement Plans

Procurement plans (PPs) proposed by the Implementing Agencies of participating provinces have been prepared based on consideration of efficiency, fairness, competition, and the past experience of the PMUs. The number of civil works contracts in the plans was about 30 but the number of consulting services packages was considered excessive at more than 80. A number of points are noted below:

- Although grouping of subprojects gives administrative efficiency, the PMUs also place importance on keeping subprojects independent since their preparation, approvals, land acquisition, and procurement will follow different schedules. By keeping design and procurement of subprojects separate, delays in one subproject does not risk delaying all the subprojects in a group.
- Where grouping of subprojects is employed, it takes account of the eventual owner / approving agency of the infrastructure e.g. DOC, DOT, DONRE, or DARD.

- For procurement of consulting services the GOV system lacks a number of modes of competitive procurement available under ADB guidelines such as Individual Consultant selection (IC), Consultant Qualification Selection (CQS), and QCBS options such as short form technical proposal or biodata proposal. Hence for small consulting services—below VND 500 million / US\$22,000—where QCBS method is considered inefficient there is no practical alternative to direct appointment method.
- The PPs include activities such as project investment preparation, appraisal of FS, appraisal of technical design, and procurement consulting support which do not normally appear in procurement plans submitted to ADB for conventional ADB loan financed projects. These activities are nonetheless required under GOV regulations, or are considered necessary by the PMUs for practical reasons.
- The draft PPs are comprehensive and contain a large number of consulting packages, which will be subject to further rationalization. In some cases appraisal may be carried out by a government agency, or procurement consulting support may be considered unnecessary by the PMU, in which case those packages will be deleted.

Contractor Selection Programs

As outlined earlier, procurement is to follow GoV procurement laws and guidelines and in this case, under RBL program requirements, it is not necessary to prepare the Procurement Plans of the Implementing Agencies. However for assessing estimated annual contract expenditures, to guide the establishment of achievable Disbursement Linked Indicators (DLIs), it is important to know the timing of contract procurements which lead to the subsequent implementation of contracts and hence disbursement of funds. Thus, based on the draft Procurement Plans submitted by the respective PMUs and discussion with them, more concise Contractor Selection Programs (CSPs) have been prepared for each project city and the key information from these has been inserted into the Program's financing model. The CSPs for each city, which include a base cost subproject summary sheet, are included in **Appendix 27**.

Risk Management

Assessment was made of procurement risks and to determine if the risks can be adequately managed and/or mitigated by the existing system; or capacity development actions are necessary. In common with findings by the country procurement risk assessment, systemic procurement weaknesses identified area lack of price competition caused by weaknesses in implementation of the procurement system coupled with collusion / bid rigging, and a failure of oversight agencies to identify and investigate red flag indicators of collusion / bid rigging. Proposed procurement risks and mitigation plan are presented in the following table. Key issues and proposed risk mitigation actions through the PAPs were discussed and agreed with the EAs during the interim mission. ADB will support the EAs in implementing, monitoring, and refining the actions during the program implementation, as needed.

Table 6-10. Procurement Risk and Mitigation Plan

No.	Risk	Rating	Mitigation measure
1.	PMUs and PMU staff lack experience in procurement of large works or open competitive bidding of consulting services contracts	High	EAs to either strengthen PMUs with experienced procurement staff or assign implementation of the program to a more experienced PMU.
2.	Use of 1S2E procurement procedure for works contracts larger than VND 20 billion leads to reduced competition and transparency	Moderate	Loan agreement to specify that 1S1E shall be used as the default method
3.	Over use of direct contracting method leads to reduced opportunity for contractors / consultants, and reduced competition	Moderate	New LOP has lower thresholds for direct contracting which mitigate this risk. EAs to direct PMUs to ensure direct contracting is not overused.
4.	PMU staff and bidders are unfamiliar with newly issued standard bidding documents (SBDs)	Moderate	All members of procurement committees to receive training by accredited training agency. Pre-bid meetings to be held.

No.	Risk	Rating	Mitigation measure
5.	Contract forms in SBDs are not used in signed contracts with contractors	Moderate	Contract forms in SBDs to be used in signed contracts
6.	Inappropriate evaluation and qualification criteria affect fairness, transparency, and competition	Substantial	EAs to direct PMU staff to prepare appropriate procurement plans, criteria, and evaluations such there are a minimum of 3 responsive bids
7.	Small contracts do not attract contractors from other provinces leading to limited competition	Moderate	Appropriate procurement plans to be prepared
8.	No financial competition as there is only 1 responsive bid	High	EAs to direct PMU staff to prepare appropriate procurement plans, criteria, and evaluations such there are a minimum of 3 responsive bids
9.	Bids are rejected due to non-responsive personnel and equipment	Moderate	EAs to direct PMU staff to prepare appropriate procurement plans, criteria, and evaluations such there are a minimum of 3 responsive bids
10.	Bids are rejected for non-substantive deviations or omissions	Moderate	EAs to direct PMU staff to prepare appropriate procurement plans, criteria, and evaluations such there are a minimum of 3 responsive bids
11.	Collusion / bid rigging leads to a pattern of repeated contract award prices within a few percent of the approved cost estimate	High	EAs and PMU staff to ensure competitive bidding reflected by achievement of a target of cumulative award prices at least 4% below the approved cost estimate
12.	BER does not clearly show how bidder meets or does not meet criteria	Moderate	Appropriate bid evaluation reports (BERs) to be prepared
13.	Contracts are awarded to SOE dependent on the Employer	Moderate	EAs to direct PMU staff to ensure bids are not awarded to bidders having conflict of interest
14.	Low contract performance security	Low	Performance securities to be required following SBDs
15.	No requirement of advance payment security	Low	Advance payment securities to be required following SBDs
16.	Delay in payments to contractors because of fund shortage prolonging contract implementation	Low	Program DLIs to ensure suitable cashflow of funds is available to the EAs
17.	Agencies responsible for monitoring and oversight fail to detect procurement violations	High	Procurement audit to be mandatory in case there are less than 3 responsive bids or if the award price is higher than 96% of the cost estimate. The audit should aim to detect any procurement violations, and also to identify the cause of the lack of competition and propose remedial measures for the future.

Source: PPTA Consultants

Incorporation of mitigation measures into the program

This may be achieved by (i) commitments in the Project Action Plan (PAP), which are equivalent to loan covenants, but are not directly tied to disbursement; or by (ii) disbursement linked indicators (DLIs), which must be achieved to trigger the disbursement of funds.

DLIs can be most effective in achieving policy objectives in long term programs, where successful performance results in continued or increased finance in subsequent years. They are however, less effective in short term programs or projects where activities are completed in a short period of time and not repeated in subsequent years. If DLIs are used in a short term program the effect is to create an additional risk to the project owner that they may not receive funds to meet contracted commitments, but gives no upside motivation whereby compliance leads to benefits in subsequent years. Since procurement activities for consulting services and works are expected to be carried out in the first 2 years of the program and not repeated in subsequent years, it is considered that DLIs are not appropriate for achieving policy objectives for procurement under this program.

PAPs represent a firm commitment by the borrower to carry out specified actions or to achieve certain goals. They are considered an appropriate mechanism for incorporating key procurement risk mitigation measures into this program. Proposed PAPs are shown in the table below. These have been selected considering the following points (i) they should directly address the overarching risks, and not just symptoms; (ii) they should be easy to monitor using existing GOV reporting systems to the extent possible; (iii) they should provide motivation for the EAs to promote improved procurement practice; and (iv) they should be few in number and simple to promote their adoption by EA leaders.

Table 6-11. Program Action Plan – Procurement Assessment

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
PMUs inadequately staffed	Procurement units/groups in PMUs will be adequately staffed by qualified and experienced persons	EAs	By first SCDP procurement package
Excessive use of direct appointment for selection of contractors and consultants	Direct appointment used for <20% by value of procurement in the province from 2016 onwards ¹⁰⁹	EAs	By 2016
Widespread collusion and bid rigging in public procurement	Discount from cost estimate >4% on average for procurement in the province from 2016 onwards ¹¹⁰	EAs	By 2016
Insufficient competition in public procurement / collusion	Three or more responsive bids for all competitively bid packages in SCDP	PMUs	By first SCDP procurement package
1S2E is the default procedure for procurement of large works under the Law on Procurement, but has risk of inefficiency and reduced transparency	1S1E is the default procedure to be used for procurement of works contracts in SCDP	PMUs	By first SCDP procurement package

Source: PPTA Consultants

Capacity building and implementation support. The lack of procurement and contract management expertise of the IA and PMUs will be addressed either by re-assignment of the program for the implementation phase to experienced IAs and/or PMUs, or by strengthening of the PMUs with additional experienced staff.

Given the recent issuance of the new Law on Procurement, and of new and substantially revised standard bidding documents, all staff to be appointed to procurement committees should attend a procurement course—normally three days—by an agency accredited by the Public Procurement Agency. Even staff already holding a procurement certificate should attend a course again in order to receive guidance on use of the new standard bidding documents and regulations.

Support to the PMUs may also be given to the PMUs through recruitment of consulting firms or individual consultants having procurement and/or contract management expertise. Packages have been included in the draft procurement plans for procurement support for each group of sub-projects. Their duties are the review of bidding documents to ensure consistency and suitability—drawings, specification, bills of quantities, preparation of request for bids—including qualification criteria, conditions of contract,

¹⁰⁹ National average proportion of procurement by direct appointment was 33% in 2012 and 38% in 2013. A target of 20% is considered readily achievable by the provinces given the reduced thresholds for direct appointment under the new LOP, and through the impact of the large value of procurement by competitive bidding under the program.

¹¹⁰ There is no clear definition of what percentage discount demonstrates the presence of competition. National average discount from cost estimate was 4.7% in 2012 and 7.2% in 2013. Hence a target of 4% represents incremental improvement and is considered readily achievable by the provinces through use of competitive bidding.

assistance with responses to requests for clarification, carry out bid evaluation as a member of the procurement committee, and assistance in preparation of a bid evaluation report.

It is proposed that ADB should provide customised training to staff of PMUs and oversight agencies in procurement monitoring, red flags for procurement irregularities, and audit and inspection.

One risk mitigation activity already adopted in one province is the publication of full electronic copies of bid documents on the internet by the Department of Planning and Investment in Thua Thien Hue Province, together with an email address for submitting complaints or comments. This initiative goes beyond the requirements of procurement law, and appears to bring substantial improvements in transparency, efficiency, and independence of the complaints mechanism. Staff report that bidders seem more willing to use the complaints system to raise issues such as overly restrictive qualification criteria in bidding documents. Ha Giang and Vinh Phuc Provincial administrations may find this an interesting initiative to study and to apply.

6.2.4 Anticorruption System

The anti-corruption legal framework is considered robust, and is chiefly made up of

- The 2005 Anti-Corruption Law.
- 2011 Law on Complaints and on Denunciation.
- The National Strategy on Anti-Corruption to 2020.

In addition, Article 16 of the Public Investment Law also specifically prohibits acts of corruption connected to public investment projects. Other laws have been prepared on voluntary disclosure and Inspection.

Management of the National Strategy for Anti-corruption was assigned to the Government Inspectorate. Resources in the form of educational and training programs have been assigned to the prevention of corruption and this is required by Article 56 of the Law on Corruption.

Article 38 of the Law on Corruption obliges public servants to report corruption allegations to the head of the agency or the head of the superior agency if the head of the employee's agency is involved. Such complaints are to be acted upon within ten days. Allegations of fraud or corruption are usually expected to be submitted in writing to the Provincial People's Committee or the City People's Committee depending on where the project is being managed. Article 32 of the Law on Corruption enables citizens to request information on matters from the Chairman of the Peoples Committee which shall be attended to within 10 days. Where crimes are alleged, allegations will be passed to the local police and prosecutors for handling.

The Institutions concerned with the compliance side of the anti-corruption program are:

- Central and Local Police (Ministry of Public Security): Criminal investigation into cases.
- Central and Local Procuracy: Prosecution of criminal liability.
- Central and Local Detection and Inspection.
- Ministry of Foreign Affairs: Cases involving foreign transactions.
- Central Steering Committee for Anti-Corruption: can suspend staff.

The May 2014 World Bank fiduciary systems assessment for the Results-Based National Urban Development Program in the Northern Mountains Region (RBNUDP-NM) concluded on Governance Systems that ..

“While this multiple-entry complaints system provides a number of options for citizens, it can also be confusing and result in complaints being passed around agencies or lost in the transfer process making it difficult for citizens to follow up their complaints. No recent significant fraud and corruption cases were reported during the assessment”...

The Transparency International Corruption Perceptions Index scored Vietnam at 31 out of 100 in the last two assessments and then compared to other countries rated Vietnam at 116 out of 177 Countries in 2013 and at 119 out of 175 countries in 2014.

An Overview of corruption and anti-corruption in Vietnam prepared by the U4 Anti Corruption Resource Centre, a web-based resource centre operated by Transparency International said in early 2012

“In spite of improvements over the past years, corruption is still considered widespread throughout the country and Vietnam still lags behind other Asian countries in terms of control of corruption and most governance indicators”...

That report later notes ...

“As mentioned above, some changes introduced by the Public Administration reform (PAR) have reduced administrative complexity and thus have helped reduce corruption opportunities. However, the overall impact of the reform on anti-corruption levels has not been substantial. In particular, public procurement is considered one of the sectors most susceptible to corruption...”

One of the strategies mentioned in the National Strategy for Anti-corruption was to collect data and findings from surveys and interviews conducted on public sector corruption. The Viet Nam Governance and Public Administration Performance Index (PAPI) 2014: Measuring Citizens' Experiences which is a Joint Policy Research Paper prepared by the Centre for Community Support and Development Studies, Centre for Research and Training of the Viet Nam Fatherland Front and UNDP, found that public perceptions of corruption in the public sector had worsened slightly between 2013 and 2014.

On the enforcement side of anti-corruption work, findings are also somewhat negative. A report entitled “Criminalising Corruption: A Study of International Practices and Application for Viet Nam” prepared by Professor Alan Doig, Dr. Dao Le Thu and Dr. Hoang Xuan Chau for UNDP and UKAID said ...

“Vietnamese agencies have reported on ineffectiveness of the anti-corruption activities; for example Report No. 4988 by the Ministry of Plan and Investment on July 16, 2013 on detecting and dealing with corrupt activities within responsibility of the Ministry of Plan and Investment, stated that from 1st January 2009 to 30 April 2013 Inspectorate and other authorities of the Ministry through inspection detected and requested for sanctioning corrupt activities with 115 cases through economic measures while 25 cases punished by administrative sanctions (no case was transferred for criminal investigation)” ...

In terms of capacity to manage anti-corruption, the above two indicators clearly suggest that capacity to reduce the incidence of corruption and that to manage prosecution has not been increased. The Government Inspectorate assured the PPTA team that the capacity to monitor, analyse and report on the anti-corruption effort has been improved, and that this is evidenced by the quality of reports tabled with the Peoples' Committees and the National Assembly each year.

As an example, in November 2014, the British Embassy hosted the 13th Anti-corruption Dialogue (ACD) themed "Anti-Corruption Prevention Measures and Asset Recovery in Vietnam" in Hanoi. The State Audit Office presented the results of the anti-corruption work at the MOF, as a member of the Central Steering Committee for Anti-Corruption. Following the inspection, the team concluded that positive changes were seen at MOF, particularly in measures to prevent and curb corruption. MOF has adopted administrative procedural reforms including streamlining procedures in filing taxes and payment, thus improving national competitiveness and minimizing corruption. The management of personnel work has been tightened with policies leaning toward making the process of recruitment and official appointments more transparent and democratic, while inspections are increased to detect signs of corruption. MOF has also tried hard to promote transparency in all its operations, particularly in sensitive areas, such as budget estimates, public debt data, inspections and supervision. Internal inspection work has been enhanced, which uncovered 23 cases of corruption, while another four cases were brought to light through processing the public's complaints. Inspection has now become a routine among government offices and local government levels to strengthen the fight against corruption. Strong participation of the people is encouraged to promote transparency. The national assembly received the recommendation for the MOF to continue with its good work, while reviewing existing regulations in financial matters to detect any gaps or mistakes that can lead to corruption.

In the circumstances, the RBL program does need to address the risk of corrupt transactions. As mentioned in the procurement section the publicizing of all bid documents on the internet would be a useful risk reduction measure and a mechanism to encourage citizens to report any discrepancies. Similar steps should be taken with the award of all contracts. As mentioned in the financial management section, the wider distribution of more timely detailed financial reports would provide management and the Peoples Committees with earlier opportunities to detect and query any irregular or unusual transactions.

In addition, the implementation program in each centre should include publicity to encourage citizens to report to the relevant People's Committee:

- Any perceptions of conflicts of interest in the Program.
- Any evidence that acts of fraud or corruption may have occurred.

The Department of Planning and Investment in each province should publicly commit that all allegations of fraud, corruption, and other prohibited activities will be thoroughly investigated and preliminary and final findings will be reported both to the relevant People's Committee and the ADB.

6.3 Social Safeguards System Assessment

6.3.1 Social Impacts and Risks

Involuntary resettlement

Several subprojects in the Program will require land acquisition and resettlement. Chapter 4.4 presents the scope of resettlement and social impacts for the subprojects identified. The main findings are:

- Some infrastructure projects—roads and bridges—require the relocation of a significant number of households (HH)—several road projects in Hue City. Each city has available resettlement sites for relocated HH under the Program. Resettlement sites close to affected areas—to maintain source of livelihood—and adequate infrastructure in these resettlement sites will have to be assured.
- The landfill site proposed in Ha Giang City has an area of 25.5 ha. This site however is located on public forestry land. Land is allocated to HH for forestry production—plantation of acacia; compensation for loss of trees is required; and impacts on income have to be assessed.
- Drainage and sewage subprojects and road upgrading have limited impacts on land acquisition and most of the households will be marginally affected through the loss of secondary structures, mainly fences. Impacts on shopkeepers and street vendors during construction may need to be addressed, especially for those subprojects located within the Citadel in Hue City. One issue for the drainage subprojects in the Citadel is the encroachment of HH—houses and fences—on public land. As much as possible, clearance of structures should be avoided; if not possible compensation for loss of structures will have to be provided.
- Subprojects involving dredging and embankments affect only the river banks and are generally located in sparsely populated areas. They will have limited impacts on land acquisition. The possible presence of HH encroaching on public land along the river banks will have to be assessed.
- Some subprojects will affect agriculture land—waste water treatment plant, and roads. Depending on the scale of loss of agriculture land, livelihood restoration programs may have to be implemented for HH losing more than 10% of their productive land. The type of income restoration measures need to be discussed with affected households (AHs) and could include credit programs, training and/or provision of assets—animals and equipment.
- Dredging the lakes in Hue will also affect the livelihood of HH growing vegetables on their banks. Income restoration measures will be required—credit program, training, etc.
- Several subprojects will require no land acquisition—parks, water supply system to the solid waste treatment facility in Hue.

- Based on a preliminary assessment no specific vulnerable population will be adversely affected by any of the proposed subprojects except the potential encroachers along the river banks and street vendors in Hue City,
- Indigenous people communities will be affected in some subprojects in Ha Giang City, However these groups are urbanized and integrated into the urban mainstream way of life. They will not be adversely affected by the Program.
- Due to the potential resettlement impacts, it is anticipated that the subprojects in each of the three cities will be categorized A for involuntary resettlement (IR). Section 4.4 provides more information on this.

Table 6-12 shows the potential level of impacts regarding land acquisition and resettlement for the proposed subprojects.

Table 6-12. Types of Subprojects and Potential Impacts on Land Acquisition and Livelihood

	Infrastructures (roads, bridge, etc.) in urban area	Drainage, sewage and road upgrading	Infrastructures (roads, waste water treatment plant etc.) in rural area	Dredging & embankment	Landfill site
Ha Giang City	XX O	X O	XX OO	X	* O
Vinh Yen City	XX O	X O	XXX OO	X	
Hue City	XXX OO	X O	XX OO	X OO	

Key:

XXX = Significant land acquisition; XX = Moderate land acquisition; X = None or limited land acquisition

OOO Significant impacts on livelihood; OO = Moderate impacts on livelihood; O = None or limited impacts on livelihood

* Public land

Source: PPTA Consultants

Indigenous peoples.

Some subprojects in Ha Giang City may affect indigenous peoples (IPs). However, the IP groups are urbanized and integrated into the mainstream way of life. IP communities will not be specifically targeted under the Program and no differential impacts are expected. Their urbanized living for many years, and their significant numbers—41% of the population in Ha Giang City and 87% in Ha Giang province—has reduced their relative vulnerability and cultural distinctiveness in comparison with the Kinh community. In rural areas within the city, IP still live in separate villages with a more traditional way of life. However none of the subprojects are located in these areas.

From the consultations conducted in Ha Giang City, it was found that the IP in the urban and rural areas are fully integrated into the mainstream of society, and there are no cultural and language barriers that render these IP communities vulnerable as compared to other groups. The IP communities met did not request any specific arrangement—translation of documents, interpreter during meetings, etc.—during resettlement process.

6.3.2 Safeguards Policy Principles Triggered

Safeguard policy principles triggered under the Program are set out as **Table 6-13**.

Table 6-13. Safeguard Policy Principles Triggered

Safeguard Policy Statement Principles ¹¹¹	Description
Involuntary Resettlement	
Principle 1: Screen the subproject early to identify past, present, and future involuntary resettlement (IR) impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons (DPs), including a gender analysis, specifically related to resettlement impacts and risks	<ul style="list-style-type: none"> • The implementation of the proposed subprojects will result in IR impacts. Screening of these activities was carried out through feasibility studies. There was, however, a lack of social data—vulnerable people, socio-economic conditions, etc. • Consultants under PPTA screened of all subprojects to identify main impacts and social risks. • No additional screening is required.
Principle 2: Carry out meaningful consultations with APs, host communities, and concerned nongovernment organizations	<ul style="list-style-type: none"> • Vietnam has a well-established system regarding consultation. In all three cities, the review of case studies and interviews with affected households (AH) show that consultation is conducted at key stages of the resettlement process; it is transparent, and information disclosed is clear. • For subprojects with resettlement impacts, continuing meaningful consultations with all AHs will be carried out following the existing consultation process.
Principle 3: Improve, or at least restore, the livelihoods of all DPs	<ul style="list-style-type: none"> • Mechanism to establish compensation rates at replacement costs rates are not fully in place; all assets to be compensated at full replacement cost. • Several subprojects will affect the income of HH—loss of productive land, loss of business etc. • Appropriate mitigation measures, compensation and assistance to restore livelihoods and living standards of all DPs to at least pre-subproject conditions, with a focus on poor and other vulnerable groups—including women—will be implemented;
Principle 4: Provide physically and economically displaced persons with needed assistance	<ul style="list-style-type: none"> • Serviced resettlements sites (RS) are present in all three cities to house relocated HH. RS are generally close to their former residence, which helps income restoration, and avoids social disruption. • Various allowances are given to relocated HH during the transition period. • As per GoV regulations, relocation in a RS is possible only when all the services are installed and functional.
Principle 5: Improve standards of living of displaced poor and other vulnerable groups to at least national minimum standards. In urban areas provide them with appropriate income sources, and legal and affordable access to adequate housing.	<ul style="list-style-type: none"> • Special measures will be incorporated in the Resettlement Plans to protect socially and economically vulnerable groups who face greater risk of further hardship
Principle 6: Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement	<ul style="list-style-type: none"> • Land for the proposed subprojects will not be acquired through negotiated settlement.
Principle 7: Ensure that DPs without titles, or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets	<ul style="list-style-type: none"> • Structures and other non-land assets are not compensated except for some specific cases. • Compensation at replacement costs of structures built before the cut-off date is required for non-titled land users.
Principle 8: Prepare a RP elaborating on DPs' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and	<ul style="list-style-type: none"> • Income and livelihood restoration measures and monitoring requirements will be included in the resettlement plans, with a focus on the poor and other

¹¹¹ Principles based on pages 16-18 of the Safeguard Policy Statement (2009) of ADB.

Safeguard Policy Statement Principles ¹¹¹	Description
reporting framework, budget, and time-bound implementation schedule	vulnerable groups, including women.
Principle 9: Disclose a draft RP, including documentation of the consultation process, in a timely manner, before subproject appraisal, in an accessible place and form, and language(s) understandable to APs and other stakeholders	<ul style="list-style-type: none"> • Disclosure of various documents, including RP, is done in transparent way—posting at commune/ward office. • In Ha Giang it is not necessary to disclose RP in another language, other than Vietnamese.
Principle 10: Conceive and execute IR as part of a development subproject or program. Include the full costs of resettlement in the presentation of the costs and benefits	<ul style="list-style-type: none"> • Full costs of resettlement will be included in the RP;
Principle 11: Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the RP under close supervision throughout subproject implementation	<ul style="list-style-type: none"> • All compensation payments and resettlement assistance—including relocation in serviced resettlement sites—will be provided to all AHs prior to physical and economic displacement.
Principle 12: Monitor and assess resettlement outcomes, impacts on the standards of living of DPs, whether the objectives of the RP have been achieved by taking into account the baseline conditions, and the results of resettlement monitoring	<ul style="list-style-type: none"> • Monitoring and reporting requirements will be included in the resettlement plans • For subprojects with physical and economic displacement, an external monitoring agency will be hired, and monitoring reports prepared and disclosed on ADB's website upon receipt;
Indigenous Peoples	
Principle 1. Screen early on to determine (i) whether IPs are present in, or have collective attachment to the subproject area; and (ii) whether subproject impacts on IPs are likely	<ul style="list-style-type: none"> • Preparation of social impact assessment (SIA) is not required under the regulations of Viet Nam, except for subprojects requiring relocation of a whole community.
Principle 2. Undertake a culturally appropriate and gender-sensitive social impact assessment or use similar methods to assess potential subproject impacts, both positive and adverse, on IPs. Give full consideration to options the affected IPs prefer in relation to the provision of subproject benefits, and the design of mitigation measures	<ul style="list-style-type: none"> • IP could be an issue only in Ha Giang City. However the IP are urbanized and integrated into the urban mainstream, and no differential impacts are expected. • The resettlement plan will include a social analysis of any affected IP communities.
Principle 3. Undertake meaningful consultations with affected IP communities, and concerned IP organizations to solicit their participation	<ul style="list-style-type: none"> • Meaningful consultations with affected IP communities in Ha Giang will be conducted; participation of IP women will be promoted during the resettlement process.
Principle 4. Ascertain the consent of affected IP communities to the following subproject activities: (i) commercial development of the cultural resources and knowledge of IPs; (ii) physical displacement from traditional or customary lands; and (iii) commercial development of natural resources within customary lands under use that would impact the livelihoods or the cultural, ceremonial, or spiritual uses that define the identity and community of IPs	
Principle 5. Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources. Where avoidance is not possible, ensure that the affected IP communities participate in the design, implementation, and monitoring and evaluation of management arrangements for such areas and natural resources, and that their benefits are equitably shared	<ul style="list-style-type: none"> • All subprojects are located in urban areas.
Principle 6. Prepare an indigenous peoples plan (IPP) that is based on the social impact assessment with the assistance of qualified and experienced experts, and draws on indigenous knowledge and participation by the affected IP communities	<ul style="list-style-type: none"> • No IPP will be prepared because of the expected limited impacts on IP communities; the resettlement plan will include mitigation measures for IP, if necessary.

Safeguard Policy Statement Principles ¹¹¹	Description
Principle 7. Disclose the draft IPP, including documentation of the consultation process and the results of the social impact assessment in a timely manner	
Principle 9. Monitor implementation of the IPP using qualified and experienced experts; adopt a participatory monitoring approach, wherever possible; and assess whether the IPP's objective and desired outcome have been achieved	

ADB = Asian Development Bank, AH = affected household, AP = affected person, CLFD- Center for Land Fund & Development; DP = displaced person, EMA = external monitoring agency, EMP = environmental management plan, GRM = grievance redress mechanism, IEE = initial environmental examination, IP = indigenous peoples, IPAP = indigenous peoples action plan, IPP = indigenous peoples plan, , IR = involuntary resettlement, PMU = Project Management Unit; PPC = Provincial People's Committee; RC = Resettlement Committee; RP = resettlement plan, SPS = safeguard policy statement; SIA = social impact assessment.

Source: PPTA Consultants

6.3.3 Diagnostics Assessment

Assessment Methodology and Resources

Involuntary resettlement

To assess and validate existing land acquisition and resettlement (LAR) safeguards systems and determine potential IR impacts and institutional capacity for safeguards implementation, the PPTA consultants carried out document reviews of existing laws and policies, supplemented by meetings and interviews with key personnel of Resettlement Committees (RC) and Center for Land Fund Development (CLFD) and Development at provincial and city levels. A gap equivalence matrix between GoV regulation and ADB SPS 2009 principles was prepared and is presented in **Appendix 17**. The PPTA Consultants also conducted focus groups discussions (FGD) with HH affected through infrastructure projects involving resettlement in recent years in each city. An average of 10 HH were met during each of the eight FGD. **Appendix 7** contains a summary of these FGD. The existing LAR legal and regulatory framework was assessed against ADB Involuntary Resettlement Policy Principles to identify existing good practice and critical gaps in the applicable SPS principles and the safeguards system, identify institutional capacity building needs, and propose safeguards related actions to be applied under the Program.¹¹²

Indigenous peoples

The IP safeguards diagnostic assessment was carried out by PPTA consultants through document reviews of existing relevant laws and policies in Viet Nam, and supplemented by meetings and interviews. A gap equivalence matrix between GoV regulation and ADB SPS 2009 principles was prepared, and is shown in **Appendix 16**. FGD were conducted in Ha Giang for a road subproject affecting IP from the Tay ethnic group. Findings were analyzed to determine (i) the Program's potential IP impacts; (ii) existing good practice in the IP safeguards system; (iii) critical gaps between the existing system and ADB SPS policy principles; (iv) institutional capacity-building needs; and (v) IP safeguards actions to be applied under the Program. Due to the low impacts on IP anticipated in Ha Giang, it is proposed that specific measures regarding IP will be included in the Resettlement Plans, if necessary, rather than preparing an IPP.

¹¹² As per ADB Safeguard Policy Statement (2009).

Involuntary Resettlement System Assessment

Current involuntary resettlement policy and practice

Viet Nam's national legal framework for resettlement and compensation is quite strong and a new Land Law was promulgated in 2013¹¹³ which came into force on 1st July 2014. The new Land Law and its implementing decrees—43/2014, 44/2014, 47/2014 and 104/2014—and circular 37/2014, provide the overall framework for involuntary resettlement in Viet Nam. Projects implemented after the 1st July 2014 have to comply with the new Land Law. Under this new Land Law, the policies and practices of the national government have become more consistent with ADB's Policy on Involuntary Resettlement. However, implementation practices may vary according each province/city, and regulations are often inconsistently applied.

For resettlement, all provinces have to issue decisions on compensation, assistance and resettlement when the government acquires land, according to the Land Law and its implementing decrees. However, these give the provinces some flexibility in providing assistance to AHs, especially regarding amounts for various allowances. The policies which will apply for resettlement for the proposed subprojects are those prepared by each province. Provincial documents have been reviewed. All three provinces issued regulations in 2014 and 2015 to comply with the new Land Law and its implementing decrees—Ha Giang Decision No. 07/2015/QD-UBND; Vinh Phuc: Decision No. 35/2014/QD-UBND and Thu Thien Hue Decision No. 46/2014/QD-UBND.

Strengths of the existing system regarding resettlement include consultation, implementation of a grievance redress mechanism, disclosure of documents, and assistance for relocation and resettlement site development. These existing good practices will be adopted by the Program, although some aspects need strengthening.

The Government has a strong regulatory framework for people's participation and this was confirmed through the case studies. AH are consulted at key stages of the resettlement process and their opinion is taken into account. A group of representatives of AHs is appointed for each subproject and is part of the resettlement team. According to the consultations with representatives of CLFD/RC and affected people, land acquisition activities are implemented with care and in a transparent way in all three cities. AHs are aware of the Program and their entitlements.

Grievance redress mechanism (GRM) is also well established in Viet Nam; HH are generally aware of the GRM; complaints are channelled through the commune/ward authorities and forwarded to RC/CLFD for analysis and submission. GRM is handled by city authorities and CLFD/RC. If the complaint is not solved at city level, HH can bring it to the provincial people's committee level. HH have also the possibility to bring grievances to the provincial court. Most complaints received which were found to be related to land compensation prices, mistakes in measurement, and delays in land acquisition were often attributed to low land compensation prices or lack of funds for compensation. When necessary, a resettlement task force is established to address grievances for specific issues. Disclosure of documents is transparent. All key documents are posted in public places—generally at the commune/ward people's committee—and a copy is given to each AH.

HH are compensated at one time, prior to relocation. AHs are not required to hand-over their land and move unless they are first paid in full, and that civil works are about to begin in their location. Relocating AHs are provided enough time to hand-over their affected properties, and build a new house. HH are also assisted to relocate through the construction of serviced resettlement sites (RS) or for self-relocation. RS are fully serviced and generally close to former location of HH. They can move to RS only when all infrastructures is completed. However, in a case study in Ha Giang, HH moved to a RS before the water supply system was not fully completed. Various allowances are given to HH during the transition period. A rental allowance is also provided for HH who are building a new house. Price of land in serviced RS is generally subsidized, and lower than market rates. Land for land compensation is possible but is done only for HH without title to land.

¹¹³ The Land Law of 2013 replaces the Land Law of 2003. Decrees 43, 44 and 47 supersede previously issued decrees related to land acquisition including Decrees 18/2004, 188/2004, 197/2004, 17/2006, 84/2007, 123/2007, 69/2009, 88/2009, 59/2011 and 189/2013;

There are a number of assistance allowances in the provincial regulations, including assistance for life stabilization, relocation transportation, relocation, rental allowance, income restoration, and training for new job skills. All provinces pay attention to poor households, who will receive special assistance through a subsistence allowance. However, the level of allowance is different in Ha Giang than in the other two provinces. In Ha Giang support is for a long period: VND 200,000/HH member/month for 12 to 48 months depending on the severity of the impact. In Vinh Phuc and Thua Thien Hue this support is VND 3 Million and 2.4 Million/HH respectively, whatever the severity of impact and the number of members in the HH. The households eligible to receive the regular government allowance under its social policy, will also receive a special allowance if they are affected by the subproject.

Critical gaps identified include, compensation rates at replacement costs. The new Land Law and Decree 44 identified a mechanism for compensation at market rates for land. Provinces have recently started to establish new rates based on new Land Law and implementing decrees; but no subproject completed to date has adopted the new rates. Provinces still determine compensation rates for land and non-land assets. However in Ha Giang and Vinh Phuc, the rates for land issued by PPC will not be used for compensation. Here, an appraisal committee¹¹⁴ is established to determine compensation rates for land. In Hue, the appraisal committee will adjust the PPC rates every year through a coefficient to reflect market rates. Based on discussions with CLFD of Hue City, the new rates for land issued in 2015 are 30% to 40% higher than those applied in 2014. However, it will be the responsibility of the PPC to ensure that these rates reflect replacement costs. For compensation for houses and structures, trees and crops, rates are issued by PPC, but are not updated every year. Compensation rates for houses and structures are based on the market price of construction materials and labor costs at the time of establishing prices. Based on consultations with AH, these rates are often lower than those of the market.

To be eligible for full compensation, AH must be in possession of a land use rights certificate (LURC). According to the Land Law 2013, for HH without LURC to be fully compensated, commune authorities must certify that the HH was occupying the land before 1st July 2004, with no violation of land legislation, without any land disputes, and in compliance with land use planning. Therefore, HH without LURC, depending on their status, may not be eligible for full land compensation. Assistance is, however, provided for non-land assets to non-titled HH. There are generally few illegal land users affected by the subprojects in the three cities. Assistance for these households is considered on a case by case basis by the Province. If a household without legal status has to relocate and has no place to go, the PPC will generally allocate a plot of land in a serviced resettlement site. Relocated HH have five years to pay for the land.

HH losing agriculture land, the Land Law stipulates that if there is no agricultural land available for compensation, they are entitled to support for vocational training, occupation change and job seeking, in addition to receiving cash compensation. But these measures are not included in the compensation plans and households have to apply under existing programs—training or credit—offered by various agencies, such as the Farmers Associations and Women Unions, and the Social Policy Bank (SPB). Impacts on livelihood and income are generally not taken into account under the resettlement process. Compensation and assistance are paid by cash to AH without taking account the long term impact on their livelihood. Examples of HH who lost their main source of income in the three cities—loss of all productive land, loss of fishing and cultivation activities on lakes and canals—and who were not assisted to restore their income have been identified in the three cities. SPS principle is that affected people will improve, or at least restore, their livelihood compared to the pre-subproject situation. But this is not monitored. Once payment has been made to affected people, resettlement activities are considered completed. A lack of monitoring, however, has been highlighted in all three cities.

Institutional capacity

Resettlement is implemented at the provincial and city level. Since 2010, most of the cities in Viet Nam established Centers for Land Fund Development (CLFDs) who are responsible for managing all compensation and resettlement activities. This is a professional unit under the guidance of the City Appraisal Committee, established for every subproject. However, Ha Giang and Vinh Phuc/Vinh Yen

¹¹⁴ In Ha Giang it will be an independent committee formed of experts coming from outside the government; in Vinh Yen members of the appraisal committee will come from various provincial departments (DONRE, DOF, DOC, etc.).

Resettlement Committees (RCs) still exist to implement all compensation and resettlement activities related to the province/city under the guidance of the Appraisal Committee. In Hue CLFDs were established in 2010 and 2011. Staff capacity for resettlement is shown by city as **Table 6-14**. In 2014, CLFD and RC of all cities were engaged in land acquisition for subprojects implemented in their localities. RC and CLFD at city level are under their respective CPCs. The Cities' CLFD/RC will be the main stakeholders for the implementation of resettlement activities for subprojects under the Program.

Ha Giang City RC implemented few projects in 2014 and the number of staff is small. The establishment of the RC is also recent—March 2015. Specific assistance will be needed for Ha Giang city. In Vinh Yen and Hue cities RC/CLFD are better staffed, and have considerable experience of resettlement. Except in Hue, RCs in Vinh Yen and Ha Giang have few or no experience with infrastructure projects, funded by the Asian Development Bank or the World Bank. They are not familiar with land acquisition processes from donor perspectives. **Table 6-14** summarise the land acquisition experience of the Program cities.

Table 6-14. Land Acquisition Experience in Program Cities

	Hue City Centre for Land Fund and Development	Vinh Yen City Resettlement Committee	Ha Giang City Resettlement Committee
Date of establishment	25/3/2011	20/8/2010	11/3/2015
Number of staff	29	11	5
Number of projects managed in 2014	More than 70 projects	46 projects	23 projects

Source: PPTA consultants' research

The assessment has identified the lack of staff with a social background. Surveys undertaken during the resettlement process also lack social data—socioeconomic status of HH, source of income, vulnerability, and gender issues. Because the detailed measurement survey (DMS) is the basis for compensation and entitlements, to avoid noncompliance with SPS, the DMS should include:

- Percentage of productive land affected in comparison with the total land to identify the severity of impact.
- Vulnerable HH as per SPS: poor and near poor, the landless, the elderly, women and children, and indigenous peoples, and those without legal title to land.
- Main source of income of HH.

A lack of knowledge in ADB SPS principles regarding IR and IP was also noted.

Indigenous People System Assessment

Current indigenous people's policy and practice

In terms of the national legal framework, equality and rights of Indigenous People (IP) are stipulated clearly in the Law. The new Constitution of Viet Nam, 2013, acknowledges equality among ethnic groups¹¹⁵ and includes general principles as stipulated in Articles 5, 9 and 58. Article 5 acknowledges the following principles:

- The Socialist Republic of Viet Nam is the unified State of all nationalities living together in the country.
- All the ethnicities are equal, unified and respect and assist one another for mutual development; all acts of national discrimination and division are strictly forbidden.
- The national language is Vietnamese. Every ethnic group has the right to use its own language and system of writing, to preserve its national identity, and to promote its fine customs, habits, traditions and culture.

¹¹⁵ GoV refers to Ethnic Minority while ADB refers to Indigenous People (IP); we will use preferably IP.

- The State implements a policy of comprehensive development, and provides conditions for the ethnic minorities to promote their physical and spiritual abilities, and to develop together with the nation.

Several Decrees, circulars and decisions have been issued regarding IP. Decree No. 05/2011/ND-CP of January 14th, 2011, provides the guidance for activities related to IP, which includes support for the maintenance of language, culture and customs. Under this Decree, owners of proposed projects affecting land, environment, or the life of IP communities, should disclose information and consultations carried out with representatives of the local authorities, to ensure that all investments result in better conditions, and are carried out in a culturally appropriate manner (Article 9).

Program 135, promulgated in 1998, focuses on poverty reduction among IP in mountainous areas or communes with special difficulties. Its target under the third phase—2012-2015 and 2016-2020—is poverty reduction at the rate of 4% per year, and income per capita in target communes/villages equal to be at least 50% of average income per capita in rural areas of the whole country.

A gap analysis matrix on IP has been prepared and is shown in **Appendix 16**.

Institutional Arrangements

At the central level, the Committee for Ethnic Minorities Affairs (CEMA) assumes the prime responsibility for IP and coordinates with concerned ministries and branches in planning, elaborating and implementing the IP's policy; and to guide, inspect, examine, review, assess, disseminate and mobilize the implementation of IP policy under Decree 05/2011. In each of the three provinces, a CEMA has been established, and implement programs to support IP. DOLISA in each province also implements programs targeting IP.

Issues of Indigenous People under the Program

Of the 63 provinces in Viet Nam, Ha Giang Province is one of only ten where the Kinh group is not the majority. Here, IP represent 87% of the population, comprising Mong, 32%; Tay, 23%; and Dao, 15%. Kinh account only for 13% of the provincial population. In Vinh Phuc and Thua Thien Hue provinces, Kinh are the majority; IP are present but represent 4.3% and 4.4% of the population, respectively. They are located in the mountainous districts of these provinces and not in urban areas. (**Table 6-15**).

Table 6-15. Indigenous People in the three Provinces, 2012

Province	Total Population	Indigenous People	Percentage IP
Ha Giang	724 537	628 568	86,8%
Vinh Phuc	999 786	42 859	4,3%
Thua Thien Hue	1 087 420	47 351	4,4%

Source: Vietnam Population and Houses Census 2012

It was confirmed by CEMA in Thua Thien Hue and in Vinh Phuc provinces, that IP is not an issue in Vinh Yen City and in Hue City; their CEMAs are not implementing any programs.

Ha Giang City has a number of IP groups—Tay, 27%; Dao, 6%; and Hoa, 3%. Nung, Mong, and Giay are also present. Kinh represent 59% of the population of the City. In the rural communes, IP live in separate villages, while in the urban area, they are integrated with the Kinh majority. In Ha Giang City, CEMA is implementing some projects under Program 135—health insurance, support to agriculture activities in the rural areas of the city, etc.

If a subproject affects IP, they are informed and consulted in the same way as for Kinh people, with active participation of the village leaders in suburban areas, who can translate information into their own language, if required. Based on consultations with AH belonging to the Tay ethnic group and affected by a road subproject in Ha Giang city, the community did not request any specific arrangement—translation of documents—during the resettlement process. It was noted that no women participated in the workshop, and it was also confirmed that no women from the Tay group joined the public meetings for the road subprojects.

Institutional capacity

The institutional capacity assessment regarding IP was undertaken only in Ha Giang City and for its RC. There is no specific consideration given to IP while conducting resettlement activities because of their integration into the mainstream way of life. Staff have no specific skills regarding IP or on other social issues. IP issues should be included in capacity building on social issues planned for the RC in Ha Giang City.

6.3.4 Safeguard Program Actions—Involuntary Resettlement and Indigenous Peoples

The following Program safeguard related actions are proposed to address the identified gaps. Progress in implementing these actions will be monitored by ADB during implementation.

Gaps in the GoV legal framework have been identified regarding involuntary resettlement and IP, as well as a lack of skills in social development with the PMU and implementing agencies—RC and CLFD. Based on these findings, the following recommendations are proposed:

- *Action 1:* Provinces will ensure that people affected by the loss of assets or land will be compensated so that they are no worse off than before that loss. Each province has set up an appraisal committee to establish or update compensating rates to follow market rates. It is the responsibility of the provinces to ensure that these compensation rates correspond to replacement costs.
- *Action 2:* Provinces will ensure that all incomes are restored at least to pre-subproject levels. The resettlement plans for the subprojects will include income restoration measures prepared in consultation with affected HH. This will focus on the poor and other vulnerable groups, including women, who are likely to be more adversely affected.
- *Action 3:* Mechanisms to ensure proper monitoring and reporting will be developed by the PMU and included in the resettlement plans. For subprojects with significant resettlement and social impacts, the PMU will hire an external monitoring agency (EMA)¹¹⁶.
- *Action 4:* The Program will include capacity building for PMU staff and those of the implementing agencies—RC and CLFD—on IR/IP safeguard programs requirements, and on the integration of social issues during screening and preparation of resettlement plans, including DMS.
- *Action 5:* PMU will ensure that measures to enhance participation of IP especially of women, in every stage of the Program implementation, including subproject design and implementation, compensation, resettlement and rehabilitation measures, and land acquisition will be in the Resettlement Plan. Measures to maximize benefits of subprojects to IP communities will be included.

The detailed safeguards program action plan is shown as **Table 6-16**.

¹¹⁶ Annex 15-4 has the ToR for the external monitoring agency.

Table 6-16. Detailed Safeguards Program Action Plan

Identified Gap	Recommended Action	Results		Responsible Entity	Fund Source
		Indicator/Target	Time Frame		
Involuntary Resettlement					
<ul style="list-style-type: none"> Mechanism to establish compensation rates at replacement costs is not fully in place; Non-land assets are not compensated in some cases; AH without land use rights certificates (LURC) may be not fully compensated 	<ul style="list-style-type: none"> All assets compensated at full replacement cost and AH without land use rights certificate (LURC) compensated for non-land assets, including resettlement assistance provided prior to physical and/or economic displacement 	<ul style="list-style-type: none"> Appraisal committees are established at province level and issue or adjust compensation rates for each subproject at replacement costs; Periodic monitoring reports reflect compensation of assets at full replacement cost and AH without LURC compensated for non-land assets prior to physical and/or economic displacement; 	Ongoing	PPC	Counter-part fund
			Before civil works	RC/CLFD	
<ul style="list-style-type: none"> Except for cash compensation, no measures to restore the livelihoods of displaced persons is included in compensation plans 	<ul style="list-style-type: none"> Income and livelihood restoration measures to be included in the resettlement plans when necessary with a focus on poor and other vulnerable groups, including women; 	<ul style="list-style-type: none"> Income and livelihood restoration measures—credit, training etc.—implemented and reflected in the periodic monitoring reports with a focus on the poor and other vulnerable groups, including women; 	<ul style="list-style-type: none"> Measures to be in place prior to civil works. Measures implemented and reflected in monitoring reports; 	PMU/RC /CLFD	Counter-part fund
<ul style="list-style-type: none"> No explicit requirements on monitoring or reporting 	<ul style="list-style-type: none"> Monitoring and reporting requirements to be included in the resettlement plans. External Monitoring Agency (EMA) to be hired for subprojects with significant resettlement and social impacts; 	<ul style="list-style-type: none"> Periodic monitoring reports are submitted to ADB; EMA is hired by PMU; 	<ul style="list-style-type: none"> Entire RP implementation—Program duration Before compensation 	PMU/RC/ CLFD PMU	Counter-part fund
<ul style="list-style-type: none"> Lack of experience on IR safeguards and lack of social development skills—including IP—among staff of PMU and RC/CLFD 	<ul style="list-style-type: none"> Capacity building for RC/CLFD on IR/IP safeguard program requirements and social issues; 	<ul style="list-style-type: none"> Training conducted for each PMU and RC/CLFD at provincial/city level 	<ul style="list-style-type: none"> To begin during subproject preparation, and will continue until safeguard plans are implemented 	Consultant will be hired during Program implementation	Project grant
Indigenous Peoples					
<ul style="list-style-type: none"> Preparation of SIA or IPP is not 	<ul style="list-style-type: none"> Measures to enhance 	<ul style="list-style-type: none"> Periodic monitoring reports reflect 	<ul style="list-style-type: none"> Program duration 	<ul style="list-style-type: none"> PMU/RC/ 	<ul style="list-style-type: none"> Project

Identified Gap	Recommended Action	Results		Responsible Entity	Fund Source
		Indicator/Target	Time Frame		
required by Vietnamese regulations except for projects requiring relocation of a whole community	participation of IP especially of women—in all subproject stages, and to maximize benefits of IP communities will be included in the Resettlement Plans.	measures implemented for IP		<ul style="list-style-type: none"> CLFD 	grant

ADB = Asian Development Bank, AH = affected household, AP = affected person, CLFD- Center for Land Fund and Development; DP = displaced person, EMA = external monitoring agency, EMP = environmental management plan, GRM = grievance redress mechanism, IEE = initial environmental examination, IP = indigenous peoples, IPAP = indigenous peoples action plan, IPP = indigenous peoples plan, , IR = involuntary resettlement, LAR = land acquisition and resettlement; PMU = Project Management Unit; PPC = Provincial People's Committee; RC = Resettlement Committee; RP = resettlement plan; SIA = social impact assessment; SPS = safeguard policy statement.

Source: PPTA Consultants

6.4 Environmental Safeguards System Assessment

6.4.1 Introduction

The Safeguard Policy Statement (SPS) 2009 of the Asian Development Bank (ADB) will apply to the Program. Although the Program will rely on the country's system to address environmental issues, it is expected to adequately meet the environment principles of the ADB SPS. Hence, this assessment verifies the adequacy and consistency of the country's environment safeguard system, including environmental safeguard practices, with those of the SPS. The country's climate change and green growth policies have also been assessed against the ADB's climate change strategic priorities and environment operational directions for 2013-2020, respectively. The findings of this assessment will be used to enhance the environmental management of subprojects under the Program, ensuring control of associated environmental impacts and risks from preparation through to implementation.

6.4.2 Environmental Impacts and Risks

From the rapid environmental assessment of the subprojects, the anticipated impacts and risks during construction are dust, noise, surface water resources problems, waste and wastewater generation, impacts arising from extraction of natural aggregates, road blocking leading to traffic and disruption of socio-economic activities, accidental damage to existing utilities and properties, and health and safety hazards to the workers and community. Few of these will likely be of high significance, particularly during the peak construction period and especially in densely populated areas.

The extent of the impacts and risks is expected to be local, confined within the main areas of influence of the subprojects, sources of raw aggregates, waste disposal sites, and routes to and from these sites. The impacts will be temporary and short-term. These will not be sufficient to threaten or weaken the surrounding resources. The conscientious implementation of the EMP will mitigate the impacts and lower their residual significance to at least "moderate" levels. Simple and uncomplicated mitigation measures, integral to socially and environmentally responsible construction practices, are commonly used at construction sites in urban settings, and are known to contractors. They will not be difficult to design and institute.

The impacts and risks during operation, will mainly come from the sanitary landfill and wastewater treatment plant operations. These are expected to be guided by respective operations manuals. If complemented with a continued capacity building program on operations and maintenance, the impacts are not expected to have long-term, persistent, permanent/irreversible adverse impacts on human health and safety, air quality, water quality, soil quality, or the biological environment.

Environmental impacts and risks are discussed in more detail in Section 4.5, including the issues and concerns relative to siting and design.

6.4.3 Safeguards Policy Principles Triggered

The Program triggers the following SPS environment principles: (i) Principle 1, on project screening; (ii) Principle 2, on conduct of environmental assessment for each subproject; (iii) Principle 4, on preparing an environmental management plan (EMP); (iv) Principle 5, on undertaking meaningful consultations with affected persons; (v) Principle 6, on disclosure of the draft environmental assessment, including the EMP; (vi) Principle 7, on EMP implementation, monitoring and reporting on EMP implementation, and disclosure of monitoring results; (vii) Principle 9, on pollution prevention, and control technologies and practices; (viii) Principle 10, on workers' health and safety; and (ix) Principle 11, on the conservation of physical cultural resources. **Appendix 18** provides the details on how these principles are triggered by the Program.

6.4.4 Diagnostics Assessment

Assessment Methodology and Resources

The country's laws, policies and institutions for environmental safeguards are the main focus of this assessment, which:

- Identifies the inconsistencies and gaps in the GoV's system with the environment principles of the SPS—by law and practice.
- Evaluates the key players in environmental management of the Program with respect to: (i) capacity and commitment in implementing their environmental management responsibilities; and (ii) willingness to take actions to strengthen capacity.
- Identifies measures and actions to narrow or bridge the gaps that are essential for achieving Program outcomes.

The assessment was carried out at the Program level. It was based on: (i) desk review of relevant policies, laws, regulations and reports; (ii) consultations with entities concerned with the environmental management of subprojects under the Program; (iii) visits to recent or on-going locally-funded subprojects; and (iv) consultations with randomly selected households affected by the visited locally-funded subprojects. And it was undertaken in collaboration, with the Project Management Units (PMUs) and City People's Committees (CPCs) of the participating cities, and Departments of Natural Resources and Environment (DONREs) of the concerned provinces. Furthermore, it built on the findings of the World Bank's Environmental and Social Systems Assessment for Viet Nam's Results-Based National Urban Development Program in the Northern Mountains Region, as applicable.

Environmental Safeguard System Assessment

Laws and Policies

The Law on Environmental Protection (LEP), No. 55/2014/QH13, dated 23 June 2014, provides the framework for environmental safeguards. The LEP prescribes four types of environmental safeguard undertakings: (i) planning for environmental protection (PEP) at the national and provincial levels; (ii) strategic environmental assessment (SEA) of strategies, plans and/or proposals; (iii) environmental impact assessment (EIA) of projects; and (iv) the formulation of an environmental protection plan (EPP) for projects that are not identified as subject to EIA.

Under the Program, each participating city is conducting an EIA covering all proposed subprojects. No EPP will be formulated. This is beneficial to the Program since it eliminates the possibility of having Category B¹¹⁷ subprojects being prepared requiring only an environmental protection plan (EPP).

The LEP's implementing guidelines—five decrees—took effect on 01 April 2015. Of these, Decree No. 18/2015/ND-CP, dated 14 February 2015, on EPP, SEA, EIA and EPP, is the most relevant. Appendix III of Decree #18 lists the projects that will be appraised and approved by the Ministry of Natural Resources and Environment (MONRE). Projects outside the thresholds in Appendix III will be appraised by the concerned DONRE, and approved by the Provincial People's Committee (PPC). Based on Appendix III:

- Vinh Yen's program as a whole will be approved by MONRE, since the investments based on the pre-feasibility study was approved by the Prime Minister. The PMU, however, has informed the PPTA team in a consultation meeting of 21 August 2015 that it intends to formally request for EIA report (EIAR) appraisal and approval to be done at the provincial level since the approving authority of the feasibility study will be the PPC.
- Those of Ha Giang and Hue will be approved by their PPCs.

¹¹⁷ The Program excludes Category A projects. ADB's SPS classifies projects into three categories:

- Category A, if proposed activity is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented; and that may affect an area larger than the sites or facilities subject to physical works. A full-blown EIA, including an EMP, is required.
- Category B, if the potential adverse impacts of a proposed activity are less adverse than those of Category A activities. Impacts are site-specific; and few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for Category A activities. An initial environmental examination (IEE), including an EMP, is required
- Category C, if proposed activity is likely to have minimal or no adverse environmental impacts. A review of project's environmental implications is required.

Decree 18 is supported by Circular 27/2015/BTNMT that provides further instructions for implementing the provisions on EIA, such as the: (i) responsibilities for preparation, appraisal and approval; (ii) forms for request for consultation, EIAR approval decision for EIAR, report on the results of inspection of environmental protection works, among others; and (iii) the timeframe for appraisal and approval.

The LEP is supported by other relevant policies, laws, regulations and technical standards in providing environmental safeguards—**Annex 1 of Appendix 18**. Among these are the National Climate Change Strategy, National Green Growth Strategy, Climate Change Action Plans of Provinces, Green City Action Plans, Law on Water Resources, Law on Cultural Heritage, Law on Biodiversity, Labor Code, Law on Construction Decree on Drainage/ Sewerage/Wastewater Treatment, and Decree on Solid Waste Management. Some of these policies and laws support the LEP in meeting the environment principles of the SPS, as shown in **Annex 2 of Appendix 18**.

The National Strategy on Climate Change (NSCC). Viet Nam is among the countries most affected by climate change. The country has shown recognition of the significance of tackling climate change to attain sustainable development by: (i) becoming a party to climate change international conventions/commitments; and (ii) promulgating strategies, programs and action plans relating to climate change. The NSCC could be considered as the fundamental climate change policy of the country. It specifies: (i) climate change adaptation and GHG emission reduction to be carried out in parallel for effective response to climate change, with the former as a priority in the initial phase; and (ii) a low-carbon economy and green growth as principles for sustainable development.

Collectively, the NSCC and supporting sectoral climate change policies are consistent with ADB's climate change strategic priorities. However, neither the climate change policies nor the Law on Environmental Protection have specified: (i) the incorporation of climate change considerations into the EIA of projects; and (ii) climate risk screening of subprojects. In practice, as evidenced by the preliminary draft EIA for Ha Giang and Vinh Yen Program, and as confirmed by the three consulted DONREs, climate change considerations in EIA is lacking. It was only with Circular 27/2015/TT-BTNMT, dated 29/05/2015, that the instruction for EIA to assess a project's impact to climate change is prescribed. However, the Circular has not instructed on the assessment of the impacts of climate change on a project, which is essential for resilience and sustainability.

During Program preparation, the PPTA team has ensured that climate change impacts on the subprojects, and their impacts on climate change are considered and incorporated into the basic designs. The PPTA team has assessed the basic designs and proposed greener alternatives where possible, taking into account flood risk, climate change and environmental aspects. Moreover, non-structural measures have been proposed. The aim is to optimize performance, durability and sustainability of the infrastructure in a more effectively resilient and low impact way. Some of the measures are related to decision support system tools and capacity building, so as to improve management and operations.

The National Green Growth Strategy (NGGS). This was assessed against ADB's Environment Operational Directions 2013-2020—Promoting Transitions to Green Growth in Asia and the Pacific. Of the seventeen solutions prescribed in the NGGS to achieve green growth, six are relevant to the Program. All of these are consistent with ADB's four environmental operational directions.

The three cities have developed GrEEEn Cities Action Plans (GCAPs)—Ha Giang's under this PPTA; those for Hue and Vinh Yen GCAPs under previous ADB funding. All three were developed within the ADB's GrEEEn Cities Operational Framework, and involved consultations with and the participation of stakeholders. The GCAPs and the Program were assessed against the country's National Action Plan on Green Growth (NAPGG). Of the twelve groups of actions in the NAPGG, the GCAPs and the Program together responded to three: (i) formulation by local governments of local green growth action plans; (ii) development of sustainable infrastructure; and (iii) development of green and sustainable cities.

Key Findings of the Assessment of Laws and Policies

The objectives of ADB's environmental safeguards are to ensure the environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process. To achieve this, the SPS has eleven environment principles. The country's

laws and policies on environmental safeguards are consistent with six of the eleven environment principles. But there are gaps with one or two elements of the remaining five. These can easily be addressed during Program preparation; and during implementation through technical assistance, and measures to be agreed between the GoV and ADB. (Table 6-17).

The results of the comparative assessment of Viet Nam's environmental safeguards system is discussed in detail in Annex B of **Appendix 18**. The findings were presented to and discussed with the: (i) DONREs, PMUs and EIA Consultants of Ha Giang and Vinh Yen in May 2015; and (ii) DONREs, PMUs, CPCs and other relevant provincial agencies in Hue in August and September 2015. The DONREs agree that: (i) the gaps are minimal in significance; (ii) addressing them will not be against GoV requirements; (iii) they can be easily dealt with and considered in the EIA, as long as the GoV requirements for an EIA are fully met; and (iv) bridging them will enhance the EIA.

Table 6-17. Gaps and Actions Taken and Proposed

Environment Principle and Concerned Element	Gap	Action
No. 1 Project screening	<ul style="list-style-type: none"> Under the GoV system, subprojects would require either an EIA or EPP. This poses risks of having Category A subprojects under the Program. RBL Program excludes Category A subprojects. 	<p><i>Action taken during Program preparation</i></p> <ul style="list-style-type: none"> The PPTA team subjected the subprojects to ADB's rapid environmental assessment to determine their categories.
	<ul style="list-style-type: none"> Under the GoV system, when a subproject changes site, design and/or scale, and impacts are anticipated to intensify due to the changes, it is required to undergo another EIA. This will not ensure the B Category of the Program remains. 	<p><i>Action to take during Program implementation</i></p> <ul style="list-style-type: none"> The PMU to be assisted by the Environment Specialist of the PMU support technical assistance package in re-screening, as necessary.
No. 2 EIA to include an assessment of transboundary impacts, e.g., climate change	<ul style="list-style-type: none"> Circular 27 prescribes the assessment of the impact of the subproject on climate change. There is no requirement to assess climate change impacts on project. 	<p><i>Action taken during Program preparation</i></p> <ul style="list-style-type: none"> The basic subproject designs carried out by the local consultants have been assessed by the PPTA team. Greener alternatives were proposed, where possible, taking into account flood risk, climate change and environmental aspects. Non-structural measures have been proposed. The aim is to optimize performance, durability and sustainability of the infrastructure. Some of these measures are related to decision support system tools and capacity building to improve management and operations. The recommendations have been shared with the design consultants for appropriate consideration and action. <p><i>Action to take during Program implementation</i></p> <ul style="list-style-type: none"> Program support and capacity development is to be provided to the PMU and include an Environment Specialist
No. 4 EMP to include performance indicators	<ul style="list-style-type: none"> GoV system does not require the EMP to include performance indicators. Considering the cities' vision of achieving the "green city" status, it is essential to have such indicators against which environmental can be assessed and verified. 	<p><i>Action to take during Program implementation</i></p> <ul style="list-style-type: none"> GoV and ADB to agree on the formulation of performance indicators. Program support and capacity development is to be provided to the PMU and involve the Environment

Environment Principle and Concerned Element	Gap	Action
		Specialist in designing an improved compliance and performance monitoring system. They should include appropriate performance indicators and reporting.
No. 5 Meaningful consultations to continue throughout Program implementation as necessary to address environmental assessment issues. Establishment of a grievance redress mechanism to address grievances regarding the Program's environmental performance.	<ul style="list-style-type: none"> Under the GoV system, consultation is required only up to the appraisal of the EIAR. 	<ul style="list-style-type: none"> <i>Action to take during Program implementation</i> GoV and ADB to agree on consultations throughout Program implementation, as required to address issues relative to environmental assessment.
	<ul style="list-style-type: none"> In practice, any grievance is addressed using the existing mechanism, which is well-established. It is four-tiered involving the commune/ward people's committees, first; district/city people's committees, second; provincial people's committees, third; and the provincial court, last. In terms of subproject implementation, this mechanism creates a situation wherein a complaint on the environmental performance of a subproject has to be addressed and resolved within the subproject before elevating to authorities outside the subproject. 	<ul style="list-style-type: none"> <i>Action to take during Program implementation</i> GoV and ADB to agree that formal and informal approaches that promptly address grievances on the subproject's environmental performance may be integrated into the existing 4-tiered mechanism, where appropriate. The PMU to be assisted by an Environment Specialist under the PMU support package integrating the formal and informal approaches into the existing grievance redress mechanism.
No. 7 EMP implementation monitoring to be reported and the findings and results to be disclosed.	<ul style="list-style-type: none"> Effects monitoring is reported to DONRE; however, the report is not disclosed to the affected communes/wards. 	<ul style="list-style-type: none"> <i>Action to take during Program implementation</i> GoV and ADB to agree on the disclosure of the reports on the results of effects and performance monitoring to the affected communes and wards.
	<ul style="list-style-type: none"> Overall performance in EMP implementation is not monitored. 	<ul style="list-style-type: none"> The PMU to be assisted by an Environment Specialist under the PMU support package in setting up the monitoring and reporting system.

Source: PPTA Consultants

Institutions

The MONRE is the lead national agency for environmental protection and management in Viet Nam. MONRE appraises and approves the EIARs of subprojects as prescribed in Appendix III of Decree 18/2015/ND-CP. Apart from MONRE, environment units/divisions in the various line ministries are also mandated to carry out sector-related environmental protection and management.

At the provincial level, the MONRE operates through the DONRE. In terms of administrative and technical matters, DONRE falls under the MONRE; in terms of operations, however, it is under the direct control of provincial governments through the PPCs. The DONRE supports the PPC on environmental management in accordance with the Law on Environmental Protection and associated regulations. The following divisions of DONRE are relevant to the Program:

- Environmental Protection Administration, which appraises submitted EIARs for the approval by PPC.
- Centre for Environmental Monitoring, which can accommodate samples for analyses from external monitoring groups and can verify monitoring results.

- Hydrometeorology and Climate Change Office, which can be consulted for advice on hydrology, meteorology and climate change.
- The key institutions and entities involved in environmental safeguard and management under the Program include:
 - Project proponent, through the PMU: (i) engages a qualified consultant to conduct EIA and prepare an EIAR; (ii) obtains the necessary approvals and permits, prior to the application for EIAR approval; (iii) carries out its responsibilities in the EMP; (iv) prior to operation, applies for the inspection of environmental protection works for certification that these have been built according to the approved EIAR.
 - MONRE: (i) appraises and approves the EIAR of the Vinh Yen Program; and (ii) confirms the completion of environmental protection works of the Vinh Yen Program as undertaken in accordance with the approved EIARs and any approved amendment/s. In a meeting held in August 2015, the PPTA team was informed that the Vinh Yen PMU will formally request for its Program EIAR to be appraised and approved at the provincial level, since the feasibility study of the investment will be approved by the PPC.
 - DONRE: (i) appraises the EIARs of the Ha Giang and Hue Projects for approval by respective PPCs; (ii) conducts field monitoring during construction; (iii) undertakes environmental effects monitoring during construction, when necessary; (iii) leads the inspection of the completed environmental protection works of a facility prior to operation; (iv) verifies the results of environmental effects monitoring reports and, when necessary, enforces and monitors the application of corrective action/s; and (v) conducts environmental monitoring of the quality of the water resource receiving the effluents from leachate and wastewater treatment facilities.
 - PPC: (i) of Hue, approves works in the buffer areas of the Citadel; (ii) of Vinh Yen, agrees with the Urban Environment Company (URENCO) and PMU on the felling/removal/cutting of trees in the urban areas; (iii) approves the EIARs of the Ha Giang and Hue Projects; and (iv) confirms the completion of environmental protection works of Ha Giang and Hue subprojects as undertaken in accordance with the approved EIARs and any approved amendment/s.
 - CPCs conduct field monitoring of subprojects through their Division of Natural Resources and Environment. The CPCs of Ha Giang and Hue are responsible for granting permits to fell trees.
 - URENCOs of Ha Giang and Vinh Yen, and the Hue Urban Environment and Public Works State Company (HEPCO) conduct periodic checking and assessment of the quality of wastewater in drainage and sewerage systems.
 - URENCO of Ha Giang monitors the environmental effects of the sanitary landfill during operation and decommissioning according to the provisions of the Decree on Solid Waste Management.

The EIA process

The EIA Process is presented in more detail in **Appendix 18**. EIA is conducted during the subproject feasibility study stage. Stakeholder consultations are required during the EIA through to EIAR appraisal. A subproject is not granted a construction permit without a decision approving the EIAR. Monitoring should be conducted: (i) quarterly, for environmental effects monitoring during subproject preparation, construction and operation; and (ii) semi-annually, for the quality of the environment in areas surrounding the subproject sites where no government monitoring stations exist. For sanitary landfills, environmental effects monitoring during operation—at least once every six months—and during decommissioning—at least once every six months for the first five years after closure—is stipulated in the Decree on Solid Waste Management. For drainage and sewerage systems, periodic environmental effects monitoring is stipulated in Decree on Drainage, Sewerage and Wastewater. A subproject is not permitted to operate without an official confirmation of completion of environmental protection works in accordance with the approved EIAR.

Environmental Management Capacity and Strengthening Needs

The MONRE and the concerned DONREs have competence in carrying out their designated functions and tasks.

The Ha Giang PMU is within the CPC. The CPC has assigned the deputy head of its Urban Management Division, a civil engineer, to concurrently take charge of environmental matters of the city's subprojects. She has no formal training or experience in environmental management of subprojects. The Division of Natural Resources and Environment—Division—of the Ha Giang CPC has four staff, of which two are technical with formal training in environmental impact assessment and monitoring. It is most likely that the Division will support the PMU on environmental matters, as necessary. The PMU and the Division have signified the need for capacity development in EIA, EMP, environmental monitoring and reporting, and climate risk screening.

The Hue PMU is within the Department of Planning and Investment (DPI). It has a Safeguard Management Group, which is currently staffed only by the DPI's Deputy Head of Business Registration, a construction engineer. He is concurrently tasked to take charge of environmental matters of the city's subprojects. He has no formal training in environmental management of subprojects, but has experience in coordinating the conduct of EIA of an internationally-funded project. The PMU has signified the need for capacity development in project screening, EIA, environmental management plan, environmental performance monitoring and reporting, and climate risk screening and assessment.

The Vinh Yen PMU is within the Overseas Development Assistance (ODA) Office of Vinh Phuc Province. The PMU has a Planning, Water Environment Management and Social Environment Management Team, set up in January 2015 with two staff. Both have experience in environmental aspects of locally-funded subprojects. One has no current role. The other is seconded to the PMU from DONRE, and because of his technical qualification and experience within DONRE's Division of Environmental Protection for seven years, he would provide the technical assistance to the PMU on environmental management. The two staff have expressed the need to strengthen their capacity in environmental screening, EIA, environmental management plan, environmental performance monitoring and reporting, and climate risk screening and assessment. The Division of Natural Resources and Environment of Vinh Yen CPC has four staff with no concurrent duties. Only one staff is in charge of environmental matters. The Division has signified the need to strengthen their capacity in EIA, environmental management plan, environmental performance monitoring and reporting, and climate risk screening and assessment.

Overall Assessment

The PMUs are staffed with at least one, but at most two persons to take charge of environmental matters under the Program. In Ha Giang and Hue: (i) the PMUs will augment staffing only during Program implementation; and (ii) the Division of Natural Resources and Environment of the CPC may be tapped to provide technical assistance to the PMUs. In Vinh Yen, one of the two staff for environmental management will provide technical assistance, but this is limited. Based on observations during the field missions, the existing capacities of the PMUs and CPCs are insufficient to meet the environmental requirements of the Program. All PMUs and CPCs have signified the need to strengthen their capacities in environmental management. It is proposed to include an Environment Specialist to provide technical assistance under the PMU Program support package. The specialist will handle environmental safeguard matters during Program implementation, and conduct and facilitate capacity building activities.

6.4.5 Safeguards Program Actions

The proposed environmental safeguard related program actions to address the identified inconsistencies and gaps is shown as **Table 6-18**.

Table 6-18. Proposed Environmental Safeguard Related Program Actions

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Result area 3—national green policy, support and oversight			
Weaknesses in the GoV's environmental safeguard system have been identified in five of the eleven environment principles of ADB's SPS	GoV and ADB to agree on: <ul style="list-style-type: none"> • Formulation of performance indicators. • Consultations to continue throughout Program implementation, as required to address issues relative to 	PPC, PMU	Prior to Program loan approval

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
	<p>environmental assessment.</p> <ul style="list-style-type: none"> Establishment of a Program-specific grievance redress mechanism that integrates formal and informal approaches to address grievances on the environmental performance of subprojects into the existing mechanism. This is to ensure grievances are addressed and resolved within the subproject first before elevating to authorities outside the subproject. The disclosure of the reports on and results of effects and performance monitoring to the affected communes and wards. 		
Limited knowledge and experience in environmental management of subprojects	Environmental Safeguard Specialist to be hired under the PMU Program support package to provide technical assistance in handling the environmental management responsibilities and requirements under the Program, and to conduct and/or facilitate capacity building in environmental management.	PPC/ADB PMU/PIS	During Program implementation

Source: PPTA Consultants

6.5 Institutional Analysis and Capacity Assessments

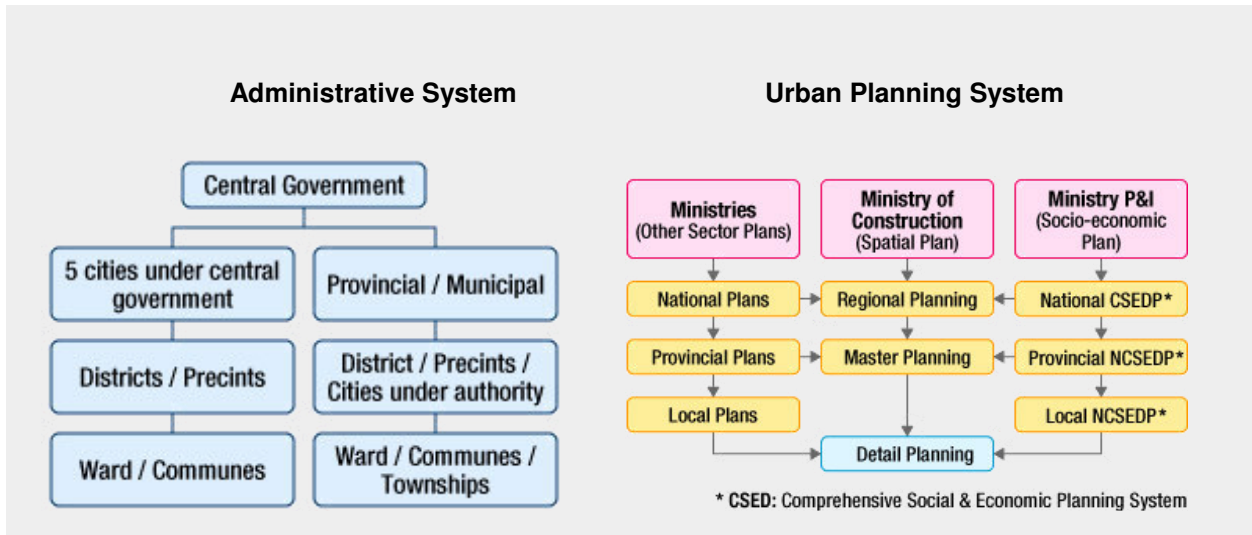
This section discusses the institutional analysis undertaken for the Program in order to establish the proposed implementation arrangements for the Program. It also summarises the capacity development assessments for the proposed program of capacity development support needed for the achievement of results under the Program. Further details of the assessment can be found in **Appendix 19**.

6.5.1 Institutional Analysis

Overview

The structure of institutions relating to urban development in Viet Nam may be described as a “matrix” system with national ministries having provincial and city line agencies, administratively linked to their respective government level but also responsible for implementing the directives of higher levels in the government hierarchy. As shown in Figure 6-1, the core agencies are the Ministry of Construction (MOC) and the Ministry of Planning and Investment (MPI). Key sectoral Ministries strongly impacting urban development outcomes are the Ministry of Natural Resources and Environment (MONRE) and the Ministry of Transport (MOT).

Figure 6-1. Administrative and Planning Systems in Viet Nam



Source: Japanese Ministry of Land, Infrastructure, Transport and Tourism:
http://www.mlit.go.jp/kokudokeikaku/international/spw/general/vietnam/index_e.html

The structure of government consists of executive governments, which are appointed by elected assemblies. These bodies are established at the national, provincial and city/district levels. At the national level there is the National Government and National Assembly. At the provincial, city/district and commune levels there are People's Committees and People's Councils. The key agencies for administering the work of government at each level are ministries—at the national level; departments, which generally mirror central ministries—at provincial level; and divisions—at city and district levels and technical staff at commune/wards levels. Other agencies, including departments, institutes, boards and companies, have been established at national, provincial and city/districts levels. In a number of cities and provinces, public companies, some of which are joint stock—equitized from the state-owned enterprises, are responsible for water supply, wastewater treatment, solid waste management, and the construction and maintenance of sewerage, parks, road and drainage networks.

Sector responsibilities for urban services and urban management involve national, provincial and city/district government agencies. National government agencies are mainly responsible for policymaking, development strategies, setting standards, and supervising enforcement. Provincial and city/district governments are generally responsible for implementing the policies, management, operation and maintenance (O&M) and construction supervision of urban infrastructure. In recent years they have assumed the main responsibility for development of urban infrastructure under government's decentralization initiatives.

At the national level, the MOC has primary responsibility for technical oversight of the urban sector and manages construction, building materials, housing, public works, architecture and development planning. It is the line ministry for urban development. Among different agencies under the MOC, the Urban Development Agency (UDA), prepares urban development strategies, national urban development master plans, and urban development projects of national significance. The UDA is a focal point agency for the National Program for Urban Development (NPUD) as well as for urban green aspects in the National Green Growth Strategy.

MONRE has primary responsibility for managing land, water and natural resources, geology, environment, climate change and mapping. It is a central authority for environmental and climate change matters, and is in charge of land-use planning. Under its organizational structure, there are different departments and agencies responsible for climate change and environment issues. The principal ones are: Meteorology and Climate Change, Environment, and the Vietnam Environment Protection Fund (VEPF).

Other central government ministries involved directly in the urban sector are:

- Ministry of Planning and Investment (MPI)—allocates the state budget to major investment projects, approves major investment projects, and prepares the national five-year social-economic development plan, including the medium term public capital development budget of the sector.
- Ministry of Finance (MOF)—proposes to the Government the overall annual budget and recurrent budgets for sector agencies and local government, sets annual sector budgets, and regulates public finances.
- The Vietnam Development Bank (VDB)—provides its own and channels external finance for urban infrastructure.
- Ministry of Transport (MOT)—manages roads, expressways, railways and all other transport assets, including sea and airports.

At the provincial level, the the Provincial People’s Committee (PPC) exercises executive authority over all provincial functions, including the state management function for urban infrastructure. The line ministries have their corresponding departments in the structure of the provincial government. PPC use boards and committees to facilitate cross-sectoral coordination. PPC is the executive body of the People’s Council and state administrative agencies in a province, and is responsible for the implementation of the Constitution, law, government policies and resolutions promulgated by the Provincial People’s Council. People’s Committees perform state management at local level and contribute to ensuring the united direction and management in the state administrative apparatus linking the central and grassroots levels.

Under Article 86 of the Law on Organization of People’s Councils and People’s Committees, the PPC is mandated to undertake the following activities relative to construction, urban management and development:

- Approval of regional development plans and urban construction in the province; management of design, building, construction and land in accordance with approved plans; approval of planning and investment projects in infrastructure works under their jurisdiction; and management of construction works and permits in the province.
- Investment management, development and maintenance of urban infrastructure, and implementation of housing policy, land, and residential development as authorized by the national government.
- Construction planning and development plans for building materials; management of mining and manufacturing, and trading of building materials.

In addition, for each province/city, there is a provincial political training institute (PPTI), which is responsible for providing training on state management, and political matters for public servants of the province and city.

Article 122 of the Law on Organization of People’s Councils and People’s Committees indicates that each PPC should have between nine and eleven members. Articles 128 and 129 stipulate that technical departments under PPC are responsible for advising, and helping the PPC to perform its state management functions in the province. Article 3, Decree No. 24/2014/NĐ-CP on the Government on the Organization of Technical Agencies under the PPC, dated 4 April 2014, stipulates that these agencies are under their direction and management, and must conform to the organizational and staffing structures stipulated by PPC. And at the same time they are under the technical guidance, supervision, and inspection of related national agencies—ministerial agencies and departments. Technical departments under PPC are responsible for advising and helping the PPC in undertaking state management functions.

The City People’s Committees (CPCs) are responsible for state administration of provincial cities. The CPC comprises 9 to 13 members¹¹⁸ who are elected by the City People’s Council. The CPC is responsible for implementing decisions made by the People’s Council at the city level, and implementing government decrees, decisions, circulars, etc. They provide instructions and guidelines to CPC agencies for implementing state management functions relating to economic, cultural and social development.

¹¹⁸ For cities under central administration, city people’s committee (CPC) consists of 11-17 members.

They also coordinate with mass organizations, and consult with the city communities. The CPC has the authority to approve projects and technical designs within prescribed limits. Technical divisions, public services delivery units, offices or companies are mandated to carry out CPC's state management functions, supporting the CPC and providing continuity in administration and management from the national to community levels. These agencies operate under the direction and management of the CPC with regard to staffing, organization and performance.

Article 100 of the Law on Organization of People's Councils and People's Committee stipulates in relation to construction and transportation, the CPC is responsible for:

- Organizational set up, implementation of approved town plans and the management of the implementation of the approved construction plan.
- Management, operation, maintenance, and use of transport and infrastructure facilities.
- Construction management, construction permits issuance and enforcement of the implementation of the law on construction.
- Implementation of housing policies and land management.
- Managing the use, production and trading of construction materials.

Institutional Assessment

A comprehensive institutional analysis and a stakeholder analysis were carried out for institutions and groups relating to the Program. The results of this analysis are set out in **Appendix 19**. Key findings of the assessments are that four significant institutional 'gaps' are driving the lack of performance in Viet Nam's cities in developing a more sustainable growth path. These are: the Policy and Institutional Gap, the Projects Gap, the Planning Gap, and the Financing Gap.

Consistency in *policy* promoting sustainable urban development is lacking, across MOC and MONRE in particular, and across the systems of, and incentives operating on urban managers. *Planning* for more sustainable cities has little institutional base, despite having a relatively solid legislative context in relation to the National Program for Urban Development and the National Green Growth Strategy. In this context, the development of more environmentally positive *projects* is difficult as there is no planning justification for those which are not 'business as usual'. Even if such projects are developed, financing them is difficult since they do not necessarily conform to cost norms, and the scale, scope and funding base of existing financing agencies does not respond to that needed by these projects. The provincial Local Development Investment Funds (LDIF) do not yet have the capacities or the capital base, to provide the financing required.

Core to bridging these gaps are:

- Incentives for effective management of urban services and for mobilizing needed revenue.
- Building capacity to plan infrastructure in support of environmentally positive, resilient, inclusive and competitive cities.
- Building capacity to develop and effectively implement these green infrastructure subprojects and link them to finance.
- Building capacity to finance these subprojects efficiently.

National action is needed to bridge these gaps. In particular, to reduce the overlapping roles of levels of government and of agencies would be efficient from a macroeconomic viewpoint, as would a move to devolve more direct responsibility for service provision, backed by an appropriate funding base, to cities. The Program is designed to specifically address these issues in respect of the provision of green infrastructure. It will provide assistance to focus and improve the knowledge of urban management and public private partnerships within each city. It will establish mechanisms for planning green investments, will assist cities in subproject development and establish a funding mechanism that can overcome a number of financing constraints. Specifically the Program will:

- Support the development of a consistent policy for Green City development across the MOC and MONRE.
- Further develop, and institutionalise, the GrEEEn City Action Plan (GCAP) approach into the urban planning process.
- Support the development of institutions to build capacity for Green City development, particularly in relation to planning for green investments, subproject development and linkage of subprojects to finance, to monitor subproject implementation, and to manage the assets developed.
- Establish a Green Cities Financing Mechanism to provide incentives and appropriate financing for green investments.

Given these structural aims, to further develop the Program design, a capacity development assessment of organisations involved in the current SCDP was undertaken. This assessment defined the detailed support required to address the broader institutional aims.

6.5.2 Capacity Analysis

Overview

The PPTA conducted a survey of capacity building needs across the agencies involved in Program implementation. The information set out below is taken from the agencies' responses to the questionnaires and from the assessments done for each city's GCAP. The four streams of assessment undertaken through the questionnaires are: project planning and implementation; technical knowledge and skills; monitoring and evaluation; and management skills and tools. The results of survey for each province/city are shown in detail in **Appendix 19**. As to the project planning and implementation, the most needed areas for capacity development are project identification prioritization and screening, as well as structuring and financing, including PPPs. For all the three cities, knowledge on PPP strategy development and management for implementation is a focus area. In particular, the use PPPs for urban services delivery, especially for environment services needs to be strengthened. In respect of technical knowledge and skills, those particularly related to green and climate change concepts and issues, as well as strategic and integrated urban planning and environmental management, are the two most important topics. They are in high demand within the participating agencies interviewed. Monitoring and evaluation issues are always a weak area in Vietnamese urban management, especially for government-related agencies where an inputs-based management approach is still common. For monitoring of KPIs—especially for environmental issues, but also for other government works—and for quality control of construction projects, there is a high demand motivated by the perceived need to improve the standard of urban services and customer orientation. Expressed needs for management skills and tools differed more widely. In terms of IT systems, Thua Thien Hue and Hue city have quite well developed GIS systems. These are being applied in natural environment, and socio-economic, master planning, including tourism, transport, agriculture and rural development, and land administration data. For the two other cities, GIS applications are of high priority.

Other Issues identified for Executing, Implementing Agencies and PMUs

All provinces and cities are implementing different donor funded projects. However, the concept of Results Based Lending (RBL), the use of a project performance monitoring system (PPMS), international accepted requirements for procurement, safeguards policies, monitoring and evaluation, as well as financial management procedures, are still very new. Although national systems will be used in the Program, bridging the gap to the performance likely to be required under the Program Action Plan (PAP) will be a challenge. These issues are more prominent for Ha Giang agencies because of their lack of experience with internationally-funded projects.

All technical agencies, such as DOC, DOT as well as the PMUs, have identified the need for strengthening on: (i) project disbursement, monitoring and compliance with environmental, social, and gender safeguards; (ii) knowledge and skills on environmental management and natural hazards; and (iii) knowledge and concepts of climate change and green growth. Financial and economic analyses for subprojects is considered to be weak by all agencies.

Department of Planning and Investment

To fulfil its roles in identifying strategic subprojects and mobilizing financing, including ODA planning and financing, and developing PPP projects in the province, all DPIs will require capacity building in:

- Project prioritization and screening, project structuring.
- ODA planning and management.
- PPP strategy development and execution.
- The deployment of non-conventional financing strategies.
- PPP modality and roles of main stakeholders in PPP projects.
- Climate change and green growth concepts and approaches.

Department of Construction

Generally, all DOCs need greater technical capacity to respond adequately to the challenges posed by natural hazards and environment degradation. Construction plans, standards and design guidelines issued by the DOC in particular will need to take into account the evolving risks and climate profiles of each city. The following areas are the most highly demanded by DOCs in all cities:

- Risk sensitive urban planning and design.
- Quality control for construction work, and appropriate monitoring and reporting systems.
- Preparation and construction of green infrastructure systems.
- Resilient urban construction.
- Integrated urban planning development and management.

In addition, there is a need to provide technical assistance (TA) and/or training on the development of mechanisms for non public sector participation in implementing and managing O&M for urban services.

Department of Natural Resources and Environment

DONRE's mandate provides for its lead role in the Commission for Environment Impact Assessment, and the main agency responsible for the management and protection of the provincial environment, and for climate change issues. DONRE needs to significantly develop its capacities in the monitoring and evaluation of evolving environmental and climate change conditions. This will not only necessitate investment in equipment for measuring environmental conditions, but also investment into development of relevant technical expertise, such as use of KPIs, analytical techniques and advanced equipment for information collection. Land use plans devised by DONRE should be linked to evolving risk profiles. In addition, the DONREs will need to receive training in:

- Low impact development methods and techniques.
- Development of environment protection plan and monitoring its implementation.
- Monitoring of natural hazards risks.
- Risk sensitive land use planning.
- Monitoring of KPIs and analytical techniques.
- Climate change, and green growth concepts and approaches.

City Urban Management Divisions (UMD)

The division will be involved in all stages of subproject implementation, from preparation to the hand over particularly in Ha Giang. For that, all aspects of capacity related to ADB/donor project management and performance need to be built. In addition, as with DOCs, UMDs also need greater technical capacity to adequately respond to the challenges posed by natural hazards and environment degradation. Construction project management will need to take into account the evolving risks and climate profiles of each city/province. The following areas will be targeted by capacity building efforts:

- Risk sensitive urban management.
- Resilient urban construction management.
- Strategic integrated urban planning, development and environment management.

- The preparation and construction of environmental infrastructure, such as water and wastewater drainage system, solid waste processing, etc.
- Climate change, and green growth concepts and approaches.

DONRE at City Level

DONRE, as in its mandate, is mainly responsible for the management and protection of the city environment. It needs to significantly develop its capacities in the monitoring and evaluation of evolving environmental and climate change conditions. This will necessitate not only investment in equipment for measuring environmental conditions, but also in development of relevant management and technical skills, such as use of KPIs, analytical techniques and the use of advanced equipment for information collection. In addition, the DONREs will need to receive training in:

- Low impact development methods and techniques.
- Monitoring of natural hazards risks.
- Risk sensitive land use planning.
- Monitoring of KPIs and analytical techniques.
- Capacity to use GIS and AutoCAD.
- Climate change, and green growth concepts and approaches.
- Capacity to use equipment for environmental observations.

Urban Services Management and Operating Companies

None of the visited companies—URENCOs, road O&M companies—had dedicated asset management software, and instead maintain an asset register manually using Excel. Information on assets is neither rigorously nor routinely updated. Customer-services skills and systems are not well developed, and all companies recognize they need to improve their knowledge, including that of good practice, and skills in these areas to more effectively manage their infrastructure. Although the companies report that their service level is adequate, it is generally acknowledged that these levels have to improve.

Capacity Assessment

Appendix 19—Institutional and Capacity Assessment—shows that the capacity development priorities need to focus at two levels: (i) building the capacities of cities, and the PMUs in particular, to implement the Program; and (ii) building national systems to support the cities. While focusing on the development of more sustainable cities, it is important not to forget that the basic systems still require strengthening in Viet Nam's cities. The capacity building program needs to be focused on both the need to build basic capacities in participating cities, as well as those to foster increased sustainability.

At the central level, the national policy and enabling framework for Green City development needs to be put in place and institutionalized—in particular within the MOC Urban Development Agency, and also in MONRE, which also has responsibility for a number of key aspects of Green City development. The VDB will also require capacity development to implement the Green City Financing Mechanism and to build provincial capacities to manage Green City funds. This will require policy development, establishing a structure and methodology for GCAPs and developing a Green City Asset Management System (**Annex 6 of Appendix 19**). This will underpin analysis on which the CGAPs are based, that both encompasses the breadth of assets of cities and links to functional asset management systems used by city enterprises and managers. Further, there is a need to support the establishment of the Green Cities Financing Mechanism (**Appendix 19 Annex 4**).

Appendix 19 also shows a need to provide assistance to the PMUs in Program implementation and monitoring, especially regarding levels of management acceptable to ADB for an RBL, procurement and disbursement procedures, and social and environmental safeguards. In addition more general requirements have been identified for institutional strengthening in a number of areas:

- Improving the core competencies of city management: planning and policy, program and project formulation and structuring, project management and management of service delivery—including asset management.

- Better understanding of urban planning for GrEEEn city development and its use in coordination across sectors for an integrated approach to sustainable and resilient urban development.
- Better understanding of PPPs and its processes.
- Better financial management and procurement skills and systems.
- Improved asset management systems, including the capacity of such systems to underpin the management of Green City development.
- Enhancing the capacity for inclusion of NGOs and community organisations to better communicate with people and communities,
- Further understanding of good practice from urban management abroad.
- Understanding new approaches to environmental management, climate change adaptation and disaster risk management.
- A need to improve written and spoken English.

There were also broad-based requests for equipment: computers, printers, copiers as well as new vehicles for site visits. These needs stand in addition to the needs for resourcing the Project Implementation Assistance essential to the program.

Capacity development will take place through intensive on-the-job training undertaken through the consultancies covering the Green City Policy Assistance (GCPA), the Independent Verification Assistance (IVA), the Program Support Assistance (PSA) and the Capacity Development Assistance (CDA), as well as the Green City Financing Mechanism (GCFM)-related TA. In respect of formal training, the priority training courses are set out in **Table 6-19**. The activities will be carried out in two stages: stage 1 will consist of essential program implementation strengthening for the present program and stage 2 will consist of activities designed to further strengthen the continuing implementation of Green City programs.

Table 6-19. Training Priorities

	Area of Training	Key Target Agencies
UP	Urban Planning and Redevelopment Series	
Stage 1		
UP1	Concept of green and resilient urban planning and re-development	DOC, UMD, DONRE
UP2	GIS hardware and software	
UP3	Planning and design of GrEEEn infrastructure and low impact development	
UP5	Tools and methods for community outreach and public awareness raising	PMU, DPI
Stage 2		
	Developing Public Private Partnerships	DPI, DOC, DOT
	Greening the urban economy	DPI, DONRE
	Cost Recovery and financial analysis of subprojects	DPI, DOC
	Professional English	All
	Overseas study tours	PMU, DPI, DOC, MONRE
SD	Service Delivery Series—Water Supply, Sewerage and Heating	
Stage 1		
SD1	General management and supervision	DPI, URENCOs
SD2	Cost recovery for services / tariff setting	as above, UMD, DOT
SD3	Asset management and maintenance	as above
SD6	Business planning	as above
Stage 2		
	Outsourcing and PPP for operation	All
	Investment analysis	DPI, MOC, DOT
	Overseas study tours	PMU, DPI, DOC, MONRE

Source: PPTA Consultants

At start-up, the immediate priorities are for the workshops on Program management, asset management, and on Green City planning concepts and policies. For budgeting purposes, it is envisaged that ten workshops will be organized annually, each lasting for approximately three days with about 15 participants in each. Programs can, of course, be run more than once, depending on the numbers of applicants.

The objectives and structuring of these capacity development components are set out in detail in **Appendix 19**. Outline Terms of Reference for capacity development support are set out in **Appendix 20**. The three key areas of institutional strengthening correspond to the three non-investment results areas under the Program. These are:

- Improved infrastructure design and supervision in participating cities – Results Area 1.
- The Green Cities policy development and support – Results Area 3.
- Support to the establishment of a Green Cities Financing Mechanism – Results Area 4.

The funds allocated under the Program for implementation support and capacity development have been estimated. For each of the above Results Areas they are:

- Improved infrastructure design and supervision in participating cities, including program implementation assistance – estimated at US\$12.0 million.
- The Green Cities policy development and capacity development support – estimated at US\$11.5 million.
- Support to the establishment of a Green Cities Financing Mechanism – estimated at US\$3.2 million for technical assistance and a required capital contribution for pilot investment subprojects of US\$6 million.

6.5.3 Institutional and Capacity Development Program Actions

In summary, the proposed institutional and capacity development program actions, to be covered under the institutional and capacity development assistance are shown in **Table 6-20**. The terms of reference for this support are set out in **Appendix 20**.

Table 6-20. Proposed Institutional and Capacity Development Program Actions

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Results Area 1 – Program implementation support			
Weakness in the capacity to implement and manage an ADB results-based lending operation.	Provide capacity development support to the PMUs in detailed design, procurement and supervision of subprojects under the Program, focusing on the need to achieve and document progress that will trigger disbursement.	PPC, PMU	During Program implementation
Results Area 3—National green policy, support and oversight			
Weaknesses in the GoV's Green City Policy development and implementation capacities	GoV and ADB to agree on: <ul style="list-style-type: none"> • Consultations to continue throughout Program implementation, as required to address issues related to policy formulation, institutionalisation and implementation. • Establishment of Program-specific monitoring, verification and evaluation systems utilising strengthened safeguards, procurement and financial management systems. • Establishment of a mechanism to foster the dissemination of best practice in Green City development and learning from Program implementation. 	PPC, PMU MOC, MONRE	During Program implementation

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Limited capacity to implement Green City programs and subprojects	Design and deliver a capacity development program tailored to Green City planning, subproject development and sustainable operations. This should be set in the context of the capacity development priorities identified under the PPTA and a training needs assessment conducted on Program initiation	PPC, PMU	During Program implementation
Results Area 4 – Green City Financing Mechanism (GCFM)			
Very limited capacity of provinces to raise, channel, disburse and administer Green City financing	<p>GoV and ADB to agree on:</p> <ul style="list-style-type: none"> • Consultations to continue throughout Program implementation, as required to address issues related to Green Cities financing, and the institutionalisation and implementation of a GCFM. • Establishment of capacity at VDB to identify, source and assess Green City projects, to provide appropriate financing, and to build provincial capacity to bid for and administer funding provided. • Establishment of GCFM, provincial-level mechanisms, capable of bidding for, and administering, funding. 	VDB, PPC, DPI	During Program implementation

Source: PPTA Consultants

6.6 Stakeholders' Participation and Communications

Stakeholder participation is undertaken as a means for social inclusion, and aims at gathering feedback and concerns from various stakeholders to help improve subproject design, implementation, and monitoring of outcomes, thus, minimizing risks. It promotes equity, which is an inherent development approach and one of the enablers of the GCAP process. Closely tied up with the Stakeholder Participation Plan (SPP) is the Stakeholders' Communications Strategy (SCS). This systematizes information dissemination, sharing, dialogues, and education of stakeholders. It provides the process, tools and mechanisms by which the SPP is operationalized to encourage dialogue foster behaviour change and mitigate risks associated with the subprojects. This section is a summary of the stakeholders' analysis and communication assessments undertaken by the PPTA consultants. More details are contained in **Appendix 21**.

6.6.1 Stakeholder Analysis

This analysis involves the process of identifying and exploring stakeholders' interests, perception, resources and capacities that have bearing on how they may participate in the Program and subproject implementation, especially those relevant to their needs. The results of a stakeholder analysis help identify potential risks to implementation of subprojects and how these may be addressed or mitigated.

Enabling Policies on Participation in Vietnam

The 2013 Constitution of the Socialist Republic of Vietnam guarantees the citizens' right to participate in the management of both the State and society. The Grassroots Democracy Decree of 1999 forms the legal basis for people's participation in making decisions that affect their lives. This decree provides the rights of people to be informed about local development policies and budgets, to be consulted about economic development and other plans, to participate in decisions about community contributions to projects, and to monitor the activities of the elected representatives at the local level.

Regulations Governing Organizations in Vietnam

There are about 2,000 civil society organizations (CSOs) in Viet Nam—Civil Society Index Research, 2006. But unlike other countries, they are registered under ministries, agencies, departments,

associations, umbrella organizations, universities, or any government recognized social and professional associations. Efforts to unify the registration and rationalize the operation of different organizations started in 1986 with the drafting of the Law of Association. This proposed law attempted to define the term “NGOs” in the Viet Nam context, their roles, functions and management arrangements. But it still remains a draft within the NGO Department of the Ministry of Home Affairs (MOHA).

Classification of Stakeholders

Stakeholders refer to persons or groups who are directly or indirectly affected by, and those who may have interest in the GCAP subprojects for investment in the three cities. They have the ability to influence the subprojects’ outcome, either positively or negatively (ADB, 2012). According to ADB guidelines, stakeholders fall into three major groups—government, civil society and the private sector.

Civil society organizations in Viet Nam are categorized according to functions, not ownership (Shozo, 2006). They are not necessarily “independent” but are quasi-governmental entities whose officials and staff receive salaries from the government. This applies mostly to mass unions, umbrella organizations and some research institutes. Section 2, Article 100 of the 2005 Civil Code of Viet Nam classifies the organizations into: (i) state bodies and military units; (ii) political organizations; (iii) socio-political organizations; (iv) economic organizations; (v) social organizations and socio-professional organizations; (vi) social funds and charitable funds; and (vii) others, which satisfy the conditions for being a legal entity. In Vietnamese usage, non-government organizationa (NGOs) will include categories (v) and (vi) in this list.

Background and Descriptions of Stakeholders

Government

By virtue of being the implementing and executing agencies, or project owners, a number of government agencies occupy the prominent role, and stake in the overall project design, financing, construction, operation, management, monitoring and evaluation. These include the Ministry of Planning and Investment (MPI) providing oversight coordination at the national level; the Departments of Planning and Investment (DPIs)—provincial level—in Thua Thien Hue and Vinh Phuc as implementing agencies; the respective Provincial People’s Committees (PPCs) as executing agencies; and the City People’s Committees (CPCs) as ultimate project owners. In Ha Giang, the CPC serves as the implementing agency. At the provincial level, the DONRE, DOF, DOC, DOT, Department of Industry and Trade (DIT), and urban environmental company (URENCO) are involved by virtue of other legal and regulatory requirements and technical standards that the subprojects need to comply with. A separate analysis of government stakeholders is in section 6.5 and detailed in **Appendix 21**. The following sections focus mainly on civil society and its subsectors, and the private sector.

Mass Unions

These comprise the Fatherland Front (FF), Women’s Union (WU), Labor Union (LU), Farmers’ Association (FA), and Veterans’ Association (VA). All were established by the Communist Party (CP) to serve as mediators between the citizens and government. In Vietnamese literature and official documents, they are classified as socio-political organizations. Membership in all mass unions is voluntary and a citizen can be a member of several or all of the unions. All mass unions are structured similar to Vietnamese government agencies, following a four-layered hierarchy from central down to the province, city/district, and commune level, and their officials draw their salaries from the government. They work under the direction of the CP as prescribed by laws, their charters and regulations. Their traditional role is that of being a transmitter of decisions and instructions from central government down to the commune level. The bulk of their work involves mobilization, especially at the grassroots level. They represent the civil society and work for its welfare. Those most relevant to the Program, based on their past and current activities are the FF, WU and YU.

Civil Society

ADB guidelines define the civil society as referring to the (i) general public, those who are directly or indirectly affected population groups and subgroups—for example, youth, girls and women’s groups—and ethnic minority groups; and (ii) civil society organizations (CSOs) which include international and national NGOs, community-based organizations (CBOs), foundations, labor unions, and independent

research institutes/academia. Those assessed under this PPTA represent nine subsectors of civil society as shown in **Table 6-21**.

Table 6-21. Civil Society Organizations Assessed

Category	Number
Umbrella organizations	5
Networks	2
INGOs	3
VNGOs	7
Professional associations	2
Communitu-based Organiozations (CBOs)	2
Affected communes and residents—three FGDs, supplemented by on-site interviews with affected households	15
Vulnerable sectors—three elderly, two PWDs, and two folk media groups	7
Other sectors— two from mass media, two schools and two academe	6
Total	49

Source: PPTA Consultants

Umbrella Organizations

Umbrella organizations are important links with which professional associations, NGOs and other social organizations register for legitimacy. The Vietnam Union of Science and Technology Associations (VUSTA) and Vietnam Union of Friendship Organizations (VUFO)-NGO Resource Centre are umbrella organizations for Vietnamese NGOs (VNGOs) and International NGOs (INGOs) respectively at national level. VUSTA has its provincial counterparts (PUSTA) in Ha Giang, Vinh Phuc and Thua Thien Hue. VUSTA is usually tapped to conduct consultations on PPC/CPC projects, and to provide reviews and comments on proposed policies. Umbrella organizations at the national and provincial levels can provide referrals on the VNGOs qualified to provide technical assistance in Program implementation in each city.

Networks

Two networks whose activities are relevant to the Prorgam are the Network of Vietnamese NGOs (VNGO) and the People's Participation Working Group. Their strengths include policy advocacy and promotion of people's participation in development and poverty reduction. Their views and ideas are recognized by both the government and the donor community. They can serve as watchdogs in insuring that stakeholder participation is mainstreamed and sustained in Program planning, implementation and monitoring.

International Non Government Organizations (INGOs)

These are usually grant donors, funding agencies or providers of humanitarian assistance of which many are based in Hanoi. Among those which have previously worked in Ha Giang and Vinh Phuc and Thua Thien Hue provinces are GRET Vietnam, Oxfam Quebec and CARITAS. But INGOs work is focused towards the rural areas and not the cities. Their activities cover education of children, livelihood for ethnic minorities, HIV/AIDS, disaster preparedness, and resilience to flooding. In recent years, and as Viet Nam has upgraded to a low middle income country, many of the INGOs have reduced their development activities and shifted their work to other poorer regions/countries, including Africa.

Vietnamese Non Government Organizations (VNGOs)

The nine VNGOs interviewed have had working experience in one of the three cities. Hue has the most number of NGOs that are based in the city itself, and with projects undertaken with the government; Vinh Yen has fewer; and Ha Giang has no experience of working with VNGOs. This is because of the distance of Ha Giang—about 6 hours travel time—from Hanoi where most of the VNGOs are based.

The VNGOs' areas of work related to the Program cover climate resilience, water and sanitation, resettlement, waste management, gender equity, energy conservation, green living, environment, and transport. As to activities and services rendered, they do research, advocacy, capacity building and awareness raising/IEC or campaigns. In terms of partnerships, many have been implementers of projects funded by international donors and INGOs. This is in addition to local NGOs and organizations they have standing relationships with. Being young and still in early stage of engagement in some projects, the VNGOs, in general, have low financial capacity. This is attested by their lean staffing, small offices and modest equipment. NGOs rely on project funding through partnering with a government ministry or INGOs. Those with past and current projects related to green city planning and green city action plans (GCAP) are listed in **Table 6-22**.

Table 6-22. VNGOs with Projects Relevant to GCAP

Name of VNGO	Related Project
Center for Development of Community Initiative and Environment (C&E)—Hanoi	<i>Education for sustainable development</i> —promotes sustainable lifestyle among ethnic minorities, school teachers and children, and youths through education and capacity building; uses a set of modules for children education; involved in the preparation of a communication plan for Green Growth Fund of Viet Nam.
Centre for Research Family Health and Community (CEFACOM)—Hanoi	<i>Communication strategy of project on water supply and sanitation</i> —uses a set of toolkits for gender and IEC; employs community-based IEC with motivators teams deployed in the villages for education, demonstration and mobilization; provides capacity building on IEC for PMUs.
Center for Social Research and Development (CSR D)—Hue	<i>Supporting local climate change adaptation</i> —uses participatory process; gathered and analyzed data on vulnerabilities, existing coping mechanisms and adaptation priorities of local people; integrated the findings in the provincial policies and planning.
Action for City—Hanoi	<i>Green living program</i> —conducts environmental education among children in Hue; promotes green lifestyle in the workplace in terms of water and energy conservation; and employs simple initiatives with quick results.

Source: PPTA Consultants

Much needs to be done in enabling NGOs to become major and an influential players, especially within provincial and city development programs. Most of their involvement has been through contracts with INGOs, and not directly with the government agencies.

Professional Organizations

The roles of professional organizations involve reviewing government policies and suggesting how these may be improved, participating in some state management activities, and in implementing programs and projects. Two professional organizations were interviewed whose work related to the Program—Vietnam Water Supply and Sewerage Association (VWSA) based in Hanoi, and the Urban Planning and Development Association (UPDA) based in Hue. With their pool of expertise in water supply and sewerage as well as in the construction of urban infrastructure, such as roads and bridges, they are qualified to participate in the Program through feasibility study preparation, subproject design and contracting of construction work.

Community-based Organizations

The PPTA team interviewed representatives of the Agriculture Cooperative whose farmlands will be subjected to land acquisition for the construction of the An Van Dong development area in Hue, and representatives of folk media groups.

In Hue, representatives of an agriculture cooperative were interviewed in relation to the 17.5 hectares of farming lands that are likely to be acquired for the proposed park and square of the administrative area in An Van Dong. Currently, this land belonging to the cooperative members are planted with rice and vegetables, enabling a farmer to earn an average of VND 900,000 per month. This income contributes about 80% of their family income, a substantial amount lost if their farms would be acquired by the government. Their secondary sources of income are from construction and company work. The farmers are ready and willing to give up their land, claiming that they have been informed earlier by CPC of the city's master plan. They are also willing to change their means of livelihood, to construction, handicrafts,

food and drink services, electrical and plumbing. There are, however, concerns and requests they wish will be considered in subproject implementation: (i) fair price for compensation; (ii) government to provide training on new livelihood activities; (iii) security during the construction period when many outsiders will be coming in to the area as part of the construction labor force; (iv) construction of a meeting room—1,000 sq m—for the wards by the government; and (v) inclusion of lotus plants in the landscape of the square.

Folk media groups are found in all communes nationwide. They are loosely organized but can easily be called upon to perform during special events and occasions. As a voluntary group, they are willing to be part of the city's promotion for the GCAP/Program.

Affected Communities and Residents

Those interviewed were household heads, mostly men with women sometimes joining the discussion, aged 60-71, with a family of 3-5 members, have been residing in the area for at least 40 years, have finished secondary schooling, receiving a pension, and a number are managing small businesses—restaurant, furniture, room rental, variety store and pig raising. The subprojects on embankments, road expansion and drainage are likely to affect their houses and lots, some partially, others entirely. Affected residents in the three cities are generally not aware of the GCAP/Program subprojects to be implemented in their areas. Those who have limited knowledge, have heard about “green cities” in passing during village meetings but have no substantial knowledge about it. Despite this gap, they indicated full support to the GCAP/Program when briefed. They appreciate the benefits that will accrue to the entire community in terms of improvements in mobility, traffic, safety, environment, sanitation, landscape, and flood prevention.

Being directly affected by the subprojects, residents made some suggestions to address their needs. These included proper compensation and alternative livelihood for those who will be displaced; road levels to consider that of their houses; roads be aligned so as to avoid unnecessary curves that cause accidents; road expansion be done on the less populated side of the roads; and that subprojects be implemented soon—the question most repeated was “when?” The latter is an expectation that needs to be managed since residents have grown weary of subprojects that have been planned, but never implemented.

Vulnerable sectors of civil society

Social inclusion and equity underlie the GCAP/Program, thus the views of the elderly, persons with disabilities (PWDs) and ethnic minorities, among the vulnerable groups, need to be taken into account in the design of the subprojects. These are the less accessible and minority population whose needs are often neglected, and who have weak influence on the city's established system for pursuing development. Vulnerable people are often set aside in development planning despite the existence of laws exhorting their inclusion.

The rights and privileges of the elderly are spelled out in the Law on Elderly—Resolution No. 51/2001/QH10. Elderly persons are organized into Elderly Associations which follow that of the mass unions on in terms of structure and operation. They are accorded respect in the community and some are taken care of by their immediate families. Many are still able citizens capable of making contributions to the working of society in terms of “harnessing and sharing their intellect, precious experience and fine qualities.” The potential roles or participation of the elderly association in GCAP are as follows: (i) being members of the community monitoring group, (ii) teaching values and practices consistent with GCP to the children, and (iii) cultural promotion activities.

The welfare and privileges of the PWDs are protected under the National Law on Disability (2010). This mandates “equal participation in society for PWDs through accommodation and access to health care, rehabilitation, education, employment vocational training, cultural services, sports, entertainment, transportation, public places, and information technology.” To ensure that they may share in the benefits of the subprojects, the physical environment—such as roads, pavements, and parks—should incorporate features that are PWD-friendly. Access to infrastructure is one way of making them productive as this can result to concomitant access to other social benefits such as education and income. So even if the Barrier-Free Access Code and Standards (2002) prescribes the national accessibility standards for construction, and the National Action Plan to Support PWDs 2012-2020 is working on a number of issues

on PWDs' access to public buildings and transportation, much has yet to be done to make urban infrastructure inclusive for PWDs.

The issue of ethnic minority groups is most relevant in Ha Giang where nearly 90% belong to ethnic minorities. In the urban areas, the ethnic minorities are already well integrated in the mainstream community and have a better standard of living than those in the rural areas. In the GCAP of Ha Giang, the roads leading to the Water Park would affect some ethnic minority groups, particularly the Mong and Dao. Taking care of their rights and welfare is a ministry-level agency called the Committee for Ethnic Minority Affairs (CEMA). Poverty is still common among the group as many do not have access to education and other basic social services by virtue of their difficult locations. Thus, the subprojects should include benefits to the ethnic minorities.

Other Sectors of Civil Society

These include three key institutions—schools, mass media and academe. The schools can play significant role in the education of the youth who can then be influencers in their respective families. Currently, the topics on environmental education and climate change have accordingly been integrated in the natural and social sciences subjects at the primary and secondary levels. The concept of Green Cities can be further linked with these topics and activities through the extra-curricular activities of the students. A campaign on “Green, Clean and Safe Environment” is ongoing in many schools at city and provincial levels, but due to limited budgets, it has not been sustained.

Viet Nam has a strong mass media system that includes TV, radio, newspapers and websites. But all mass media is owned and operated by the government. The Vietnamese Television (VTV), Voice of Viet Nam (VOV), Nhan dan Newspaper, Communist magazine and Viet Nam agent news are the five mass media which operate at the same level as a ministry. Every city or district has a television and radio center which collects reports on key events happening locally. These materials are then broadcast in district FM systems and sent to provincial TV channels for transmission.

Hue is the only city with an existing academe. The Hue University is one of the top three in Viet Nam. It has produced many of the country's intellectuals, socio-political activists, scientists, professors and artists. As a multi-disciplinary university and a center for scientific research, its track record includes partnerships with more than 50 universities and organizations worldwide; seventy international cooperation projects and over VND 500 million for investment capital every year. Their expertise may be tapped in drafting feasibility and baseline studies, and capacity building.

Private Sector

This is represented by the Viet Nam Chamber of Commerce and Industry (VCCI) and 11 business associations and companies interviewed in the study. VCCI protects the welfare of businesses, both state-owned enterprises and private companies. Its officials and staff are paid by the government. Being an entity close to government, VCCI strives to improve the business environment through dialogue with government. An Inter-ministerial Steering Committee was formed in 2004 to collect the views and comments of the business community, and keep track of the response of government agencies to these issues.

Infrastructure built by members of the business associations include buildings, roads, bridges, hydropower parks, drainage and pavements. Some have been engaged in dredging. A press statement in 2014 quoting WB Group President Jim Yong Kim described the private sector's significant role in development as follows: “With one additional unit of capital, the private sector in Viet Nam produces three times additional revenue compared to state-owned enterprises.” However, it noted that the private sector in Viet Nam is “still relatively underdeveloped and faces major constraints.” The same constraints surfaced in the interviews: the inability of the small-funded firms to compete with big-funded state enterprises; unclear policy about bidding competition among external—outside the province—and internal contractors—from the province; and resorting to personal or official ties to influence the bidding process.

Stakeholders' Interest

Based on the stakeholder matrix, the interests of stakeholders in the Program are hinged on their mandates and the protection of rights and welfare of the groups they represent—**Appendix 21, Annex 1.**

There is also a common thread among all stakeholders of expecting to be involved. The mass unions, CBOs and vulnerable groups, interests tend to focus on benefits from GCAP projects that should accrue to their groups. For umbrella organizations, INGOs/VNGOs, the private sector, and other groups of civil society, the focus is more on the services they can render. The only thorny issue is on land acquisition and compensation among residents affected by the construction of infrastructure in all the three cities. On the whole, the interests revolve around a common good; but the land acquisition and compensation needs to be given attention since it was persistently raised as a concern during the interviews and consultations.

Stakeholders' Perception

In general, all stakeholders perceive the green cities concept and the subprojects proposed as very commendable since they would lead to multiple benefits and a better quality of life. These benefits include, higher mobility for people and goods, business growth, improved flow of traffic, more jobs, a cleaner environment, improved safety, better health, less flooding, more beautiful landscape, enhanced consciousness about environmental protection, protection of vulnerable groups, and the opportunity for multi-stakeholder partnerships. While the subprojects offer unquestionable benefits, there are issues and concerns associated with how they will be implemented. These are land acquisition and compensation, temporary discomforts during construction—noise, dust, traffic, constrained mobility, non-compliance of contractors with standards and infrastructure requirements for the elderly and PWDs, and risk of destroying heritage sites and artifacts in the Citadel in Hue.

Stakeholders' Resources and Capacities

Stakeholders' resources and capacities can be used to support or stop a subproject. So far, all stakeholders indicate favorable support of the Program, the green cities concept and its subprojects. Hence, whatever resources and capacities stakeholders have now can be considered assets for the Program (**Table 6-23**).

Table 6-23. Resources and Capacities of Stakeholders

Stakeholder	Resources	Capacity
Mass unions	<ul style="list-style-type: none"> - Mandates given by government - Massive membership all over the country 	<ul style="list-style-type: none"> - Favoured partners of government - Strengths in IEC and community mobilization
Civil Society		
Umbrella organizations	<ul style="list-style-type: none"> - Connection with government - Power to issue permits for INGOs and VNGOs to operate 	<ul style="list-style-type: none"> - Influence on policy and program directions of the government - Power to enforce guidelines on INGOs and VNGOs' operations
INGOs	<ul style="list-style-type: none"> - Large financial resources - High quality of expertise - Support to VNGOs 	<ul style="list-style-type: none"> - Many have stopped funding projects in Viet Nam - Can help strengthen capacities of VNGOs
VNGOs	<ul style="list-style-type: none"> - Lean staffing - Low financial standing - Strong partnership with INGOs 	<ul style="list-style-type: none"> - Strength in service delivery at the grassroots level - Good track record in participatory approaches - Low influence on government policies and programs
Professional associations	<ul style="list-style-type: none"> - Connections with government - Pool of scientists and intelligentsia 	<ul style="list-style-type: none"> - Some degree of influence on policy and program directions of the government - Track record in research
CBOs—folk media groups, farmers' cooperatives	<ul style="list-style-type: none"> - Untapped services—folk media groups - Ownership of land needed by the subprojects—farmers' cooperative 	<ul style="list-style-type: none"> - Negotiations can delay or stall the implementation of subprojects

Stakeholder	Resources	Capacity
Affected communes and residents	<ul style="list-style-type: none"> Political power of commune leaders Ownership of land and properties needed for the subprojects 	<ul style="list-style-type: none"> Negotiations can delay or stall the implementation of subprojects
Vulnerable sector—elderly, PWDs and ethnic minorities	<ul style="list-style-type: none"> Organized into groups—elderly and PWDs 	<ul style="list-style-type: none"> Low influence on government projects
Other sectors—schools, media and academe	<ul style="list-style-type: none"> Mandates to inform and educate Officials and staff paid by the government 	<ul style="list-style-type: none"> Broad reach and influence over critical mass of society
Private sector	<ul style="list-style-type: none"> Available capital Manpower and machinery for construction 	<ul style="list-style-type: none"> Track record in construction Capacity to employ people

Source: PPTA Consultants

Areas of Participation

There are eight areas where the GCAP stakeholders may participate—awareness raising/IEC, advocacy, community mobilization, delivery of services, capacity building, monitoring, subproject design, and research (**Table 6-24**). Except for the affected communes and residents and the vulnerable sector, the stakeholders have multiple areas where they are capable of participating. The VNGOs' resources and capacities qualify them to participate in all the eight areas. Awareness raising/IEC is one area where almost all stakeholders have the proven capacity to participate.

Table 6-24. Areas of Participation for the Stakeholders

Stakeholder	Awareness Raising/IEC	Advocacy	Community Mobilization	Delivery of services	Capacity Building	Monitoring	Project Design	Research
Mass unions	X	X	X	X	X	X		
Civil Society								
▪ Umbrella organizations	X	X		X	X		X	X
▪ INGOs	X	X	X		X			X
▪ VNGOs	X	X	X	X	X	X	X	X
▪ Professional associations	X	X		X	X		X	X
▪ CBOs	X		X			X		
▪ Affected communes and residents						X		
▪ Vulnerable sector						X		
▪ Other sectors	X	X		X	X			X
Private sector	X			X	X	X	X	

Source: PPTA Consultants

Barriers to Participation

There are barriers that are common to all stakeholders and those that are specific to some. For the mass unions, however, non-participation is not an issue—they are in fact the favored partners in the implementation of government projects. For others, the barriers to participation are the lack of information, lack of invitation to participate, lack of appreciation for VNGOs work, unequal playing field for private sector, lack of resources, and isolation.

Recommendations

To remove the barriers, the following actions are recommended:

- Orient subproject implementers—PMU—on participatory development planning methods, tools and techniques.
- Implement a stakeholders' plan and communications strategy early on.
- Build up a compelling case for NGOs' work and involvement in government development subprojects.
- Level the playing field for both state and private sector in terms of requirements, procedures and information sharing about subprojects for bidding.
- Deliberately seek out those stakeholders who are isolated, physically and power-wise.

6.6.2 Communication Strategy.

Communications Strategy and its Role in GCAP

A Stakeholder Communication Strategy (SCS) generally aims to establish consensus by facilitating understanding and generating well-informed discussion among the various stakeholders about the Program in general and the subprojects in particular. It is a tool for informed participation and for ensuring a climate of acceptance and support for Program implementation. Beyond people's awareness and support, communication also aims to deliberately bring the stakeholders into adopting and sustaining practices—or a lifestyle—consistent with the vision and goals of the Program.

Laws Governing Communication in Vietnam

The laws governing media may be viewed as conservative given the political history of the country. In 1999, the Law of Media prescribes that the media is to serve as the mouth piece of the Communist Party (CP). The Law on Information Technology in 2006 allows the use of IT for the country's modernization, but prohibits the transmission of information against the government. The amended 2013 Constitution declares citizens' freedom of speech, of the press, right to access information and right to demonstrate, the media's mandate to protect first, and foremost the CP policies and strategies remains. Hence, the media serves as the voice of the government and its various agencies. All media in Viet Nam is owned and managed by the government.

Government Agencies Performing Communication Function

The Ministry of Information and Communication (MIC) is the policy making and regulatory body at the national level for the press, radio, telecommunications, information technology, and communication infrastructure. Its provincial level office, the Department of Information and Communication (DIC), assumes the same task, and provides guidance to the enforcement of laws, ordinances, regulations and the implementation of development strategies and plans related to the press, publishing, post, telecommunications and information technology.

The Department of Culture, Sports and Tourism (DOCST) and Department of Education and Training (DOET) undertake more of the communication activities in support of specific government programs and projects. At city level, the Center for Culture, Sport and Tourism of Ha Giang, has various groups working on communication, sport, and music/dances, among others. The office also conceptualizes and produces communication materials, such as posters and video, and maintains a website.

The City Division of Education and Training of Hue and Vinh Yen, has environmental protection concepts already integrated into natural and social sciences subjects. Together with other schools nationwide, it organizes activities to promote the "Green, Clean and Safe Environment" campaign. The time allotted for extracurricular activities of students during Saturdays is also being maximized to promote environmental protection that includes proper solid waste management and sanitation.

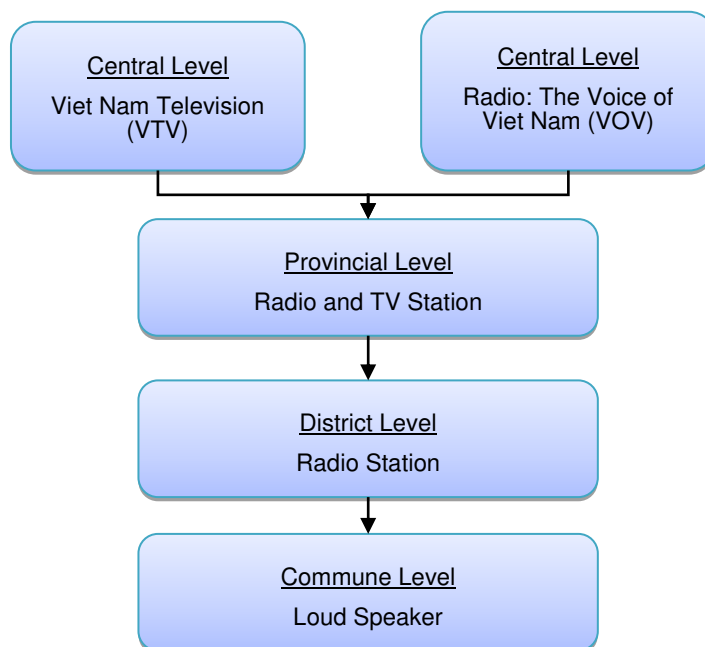
Mass Media System

Viet Nam has a strong mass media system that includes TV, radio, loud speakers, newspapers and websites.

TV and Radio Broadcast System

Vietnam Television (VTV) and the Voice of Vietnam (VOV) are the national TV and radio networks. They have several networks nationwide, including those in Ha Giang, Hue and Vinh Yen. TV and radio stations are separate offices at the national level; they merge and combine into one office at the provincial level. Only radio stations are operated at the district/city level, and only loud speakers are at the commune level (Figure 6-2).

Figure 6-2. TV and Radio Broadcast System in Viet Nam



Source: PPTA Consultants

Loud Speakers

As the medium for information dissemination at the village level, loud speakers are installed in all communes. An assigned person from the village usually makes announcements in the morning about events and news of relevance to local people. These news items can come from CPC, their newspapers and also the internet. It is also a means for information dissemination on culture and tourism. In some villages, loud speakers need to be repaired and better maintained to function properly.

Newspapers

All provinces in Vietnam have press agencies that publish local newspapers under the Center on Culture, Sport and Tourism. Local newspapers are named after the province and are published twice or three times a week. They usually cover news and events happening at the province and city levels, and national news with local relevance, such as new laws and policies.

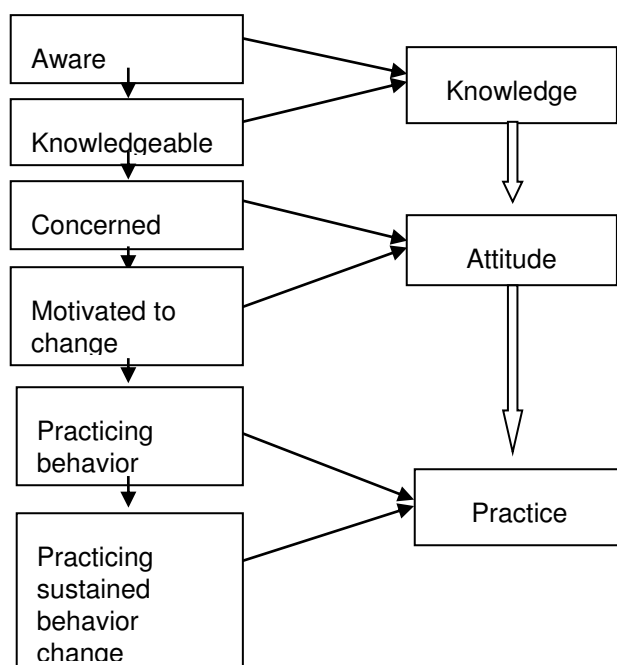
Media Appliance Ownership

The Department of Information and Communications (DIC) in Ha Giang gave the following estimates for media appliance ownership in the city—all households have at least one cell phone; 98% own a television; 30% own a radio; and 80% have access to the Internet at home or in an internet café. DICs in Hue and Vinh Phuc have neither a record nor any idea of such ownership in their cities. A 2014 Report on Viet Nam Internet Resources, shows that new internet registrations in the three cities using “.vn” domain are—Ha Giang, 0.04%; Thua Thien Hue, 0.28%; and Vinh Phuc, 0.34%. Nevertheless, the growth rate in Internet access, increases each year, with 104% new registrations in 2014 for Viet Nam.

Stakeholders and the Behavior Change Continuum (BCC)

Communication intervenes in the area of behavior change. The latter is defined as any change that can occur in a person's knowledge, attitude and practice (KAP). The assumption is that this is a progressive process where one stage leads to the other (**Figure 6-3**). The goal of the communication strategy is not just to create awareness about the Program, but to bring the stakeholders through the behavioral stages where they develop a changed attitude and adopt practices consistent with the goals of the Program. Hence, using the BCC as a yardstick, the stakeholders' KAP level was assessed qualitatively (**Table 6-26**).

Figure 6-3. Behavior Change Continuum



Source: PPTA Consultants

From information gathered during FGDs and interviews, only the implementing agencies and executing agencies in the three cities are familiar with the Program. Stakeholders representing NGOs, affected communes, and the private sector who have participated in the GCAP workshops “have heard” about the concept but could hardly explain or capture the essence of the Program. Hence, the communication strategy has a long way to go. The contents of **Table 6-25** can be the framework of the communications strategy, and act as the basis for monitoring the shift from “doing business as usual” to “doing things differently” through GCAP and the Program as the intervention.

Table 6-25. Assessment of Stakeholders' Knowledge, Attitude and Practices Using the Behavior Change Continuum

Stakeholder	Knowledge		Attitude		Practice	
	Aware	Knowledgeable	Concerned	Motivated to change	Practicing behavior	Practicing sustained behavior
Government						
PPC, CPC, PMU	Yes	Yes	Yes	Yes	Just starting through GCAP	
Related line agencies	Yes	Yes	Yes	Yes	Just starting through GCAP	
Mass Unions and YU	Have heard	No	Yes			

Stakeholder	Knowledge		Attitude		Practice	
	Aware	Knowledge-able	Concerned	Motivated to change	Practicing behavior	Practicing sustained behavior
CSOs						
Umbrella organizations	No	No	Yes			Since the stakeholders are only partially aware of GCAP, they have not moved into these behaviors yet.
INGOs/VNGOs	Have heard	No				
Professional associations	No	No				
CBOs	No	No				
Affected communes and residents	Have heard	No				
Vulnerable groups	No	No				
Other groups of civil society	No	No				
Private sector	A few have heard; many not aware	No				

Source: PPTA Consultants

Information Needs of Stakeholders

The information needs of the various stakeholders can be derived from the KAP assessment. A “catch-all” guide is to provide the 5W’s—who, what, why, where, when—and 1H—how—about the Program. More specific information needs for each group were also solicited from the stakeholders and the results are summarized as **Table 6-26**.

Table 6-26. Information Needs of Stakeholders

Stakeholder	Information Needs
Mass unions	Project benefits and impacts; mitigating measures for negative impacts Timeline of implementation Climate change adaptation and mitigation Disaster risk reduction Systematic community monitoring- indicators, methods, techniques
CSOs:	
Umbrella organizations	Detailed description and location of sub-projects What things are different with GCAP/Program from other government urban development projects?
INGOs/VNGOs	Criteria and process for selection of subprojects Guidelines and mechanisms for participation of VNGOs
Professional associations	List and description of subprojects and a map indicating their locations
CBOs:	
Folk media groups	Program benefits and impacts; mitigating measures for negative impacts
Farmers’ cooperative	Specific location of subprojects accompanied with simple and easy to understand maps Law on land acquisition and compensation—procedures, who is in charge, timetable, grievance mechanism, etc. Plan for alternative livelihoods
Affected communes and	Specific locations of subprojects accompanied with simple and easy to

Stakeholder	Information Needs
residents	understand maps Law on land acquisition and compensation—procedures, who is in charge, timetable, grievance mechanism, etc. Salient provisions of Land Law 2013
Vulnerable groups:	
Elderly	Program benefits and impacts; mitigating measures for negative impacts Specific location of subprojects accompanied with simple and easy to understand maps Features of the sub-projects that would specially benefit them
Ethnic minorities	Same as above
People with disabilities	Same as above
Other civil society groups:	
Schools	Concept of Green City In what activities shall we be involved?
Media	Concept of Green City
Academe	List and description of subprojects and a map indicating their locations List of studies that will be conducted for the Program
Private sector	Green and resilient infrastructure Low impact development Public Private Partnerships Which subprojects will be bidden out to the private sector? Guidelines for selecting contractors: local vs. external

Source: PPTA Consultants

Standing information needs to revolve around more details about the GCAP/Program subprojects and the timeline for their implementation. “When” was the most frequently asked question and there seems to be high expectation that subprojects should start soon.

Preferred Information Sources, Channels and Communication Materials

Sources

The highly preferred source of information about the Program and its subprojects among all stakeholders are the government officials from PPC/CPC. As the the Program implementing or executing officials, they are deemed highly credible and knowledgeable about the details. They are also highly respected, especially at the commune and village levels.

Channels and Communication Materials

All stakeholders prefer multiple channels of information rather than relying on one (**Table 6-27**). The most preferred channel is face-to-face—through meetings or workshops and conferences. TV is also mentioned since almost everybody has access to it. Newspapers and websites, also complement their choices, although the former is more popular among professionals. Leaflets provide a handy reference that people can always go back to when needed. As an attention getter, billboards—as outdoor media—provide an easy stimulus for people to read about a message. At the village level, loud speakers are the among the channels of choice; however, many complain that they are not properly maintained everywhere.

Table 6-27. Preferred Information Sources, Channels and Communication Materials of Stakeholders

Stakeholder	Meetings (various levels)	Forums Conferences Workshops	TV	Website	Newspapers	Leaflets	Billboards	Loud speakers
Mass unions	X	X	X			X	X	X
CSOs								
Umbrella organizations	X	X	X		X	X		
Networks		X		X				
INGOs/VNGOs		X						
Professional associations	X	X		X	X	X		
CBOs								
Folk media groups	X		X			X		X
Farmers' cooperative	X		X			X		X
Affected communes and residents	X						X	
Vulnerable groups								
Elderly	X		X				X	X
Ethnic minorities	X							X
People with disabilities	X		X					X
Other civil society groups:								
Schools	X	X		X		X	X	
Media	X		X	X	X	X	X	
Academe		X	X	X	X			
Private sector	X	X	X		X	X		

Source: PPTA Consultants

Current Communication Practices***Prominence of mass organizations***

Most of the communication activities in support of government development programs, cascade from the central level down to the villages through the efforts of the mass unions, led by the Fatherland Front. These mass organizations have a yearly plan of activities, which they implement under modest funding from government. The WUs in all cities have taken the lead in IEC on various projects—credit, revolving fund, composting, cleanliness of streets, roads and backyards, managing capital, road maintenance, water supply, laws on children's protection, and solid waste management.

Highly interpersonal in approach

Many of the communication activities pertaining to development programs of the provincial and city governments are being carried out by the mass organizations, especially the WU and YU. They see face-to-face communications as cheaper and more effective since most of them are already known and trusted by the people at the commune and village levels.

Village motivators' team

At the commune level, there are people carefully chosen to serve as local motivators. They are formed into a team of 10-20 people, and usually include commune or village leaders, women collaborators, village health workers, and teachers. They are selected based on experience, knowledge and respect they get from the community. They undergo training and are tapped as local educators to undertake IEC

in the village, make household visits, and influence other members into adopting certain practices, such as good sanitation and segregation of solid waste.

Community-based IEC

Community members are grouped based on interest and skills. They form clubs and meet regularly—often monthly—for information sharing or to transmit information to households. They conduct demonstrations on proper hand washing and sanitation, assisted by loud speakers installed in every village. Folk media groups in some villages form part of this community-based IEC.

Use of toolkits

A number of VNGOs—CEFACOM, C&E, and Action for City—have produced toolkits in partnership with INGOs. These are used as educational communication materials particularly for school children on topics such as health, sanitation, green living—water and energy conservation. Based on pedagogical principles, they make good communication materials, which can be tailored to the Vietnamese context.

School activities

The DOET has an ongoing campaign on “Green, Clean and Safe Environment” among the primary and secondary schools in all the three cities. Through an extracurricular program, students are engaged in activities that promote behavior consistent with environmental care and protection. They lack adequate resources, though, to sustain the efforts.

Barriers in Implementing Communications Strategy

A number of barriers affect the implementation of current IEC or communication activities—limited budgets for operations; lack of communication skills; and lack of baseline data. Communication, though recognized, has always been the recipient of a modest budget, and is treated more as a rider in other budget items. Those doing communication work usually have no background in professional communication, and have other jobs to attend to. Baseline data, especially on media ownership, is non-existent at the provincial or city level, and has never been included in the socio-economic survey for SEDP.

Capacity Building Needs

To enhance the implementation of the Stakeholder Plan and the Communications Strategy, **Table 6-28** shows the areas recommended for capacity building.

Table 6-28. Capacity Building Needs in Stakeholder Participation and Communications Strategy

Stakeholder	Capacity building needs
PMU Communication Coordinator	Communication baseline study Communications strategy management
Mass unions	Crafting key messages Creating a pitch Selecting media and channels Monitoring behavior change
NGO IEC Contractor	Strategic communication planning Risk communication

Source: PPTA Consultants

Other Prospects for Enhancing the Communication Strategy

Project Website. With relative access to the Internet in the three cities, the virtual presence of GCAP and the Program can be made through the building of the Program’s web site. This could be an added page to the current CPC website of each city, and linked to the Green Cities Network, or its own, but linked site.

Walkability App. This mobile phone application developed by Clean Air Asia, aims to carry out mobility audits and convey the results to the authorities. Audit results are mapped from GPS of smart phones. It helps ordinary citizens to assess the “walkability” of sidewalks, streets, or pavements by “grading” and describing their conditions. The prevalence of Internet and smart phones make this technology possible as long as the people are willing to contribute.

Summary Program Action Plan

Major gaps and issues, actions, responsible agencies, and the timeframe for implementation of the stakeholder participation and communication strategy are summarized as **Table 6-29**.

Table 6-29. Summary Program Action Plan For Participation and Communications Strategy—Ha Giang, Vinh Yen and Hue

Major Gaps and Issues	Actions	Responsible Agency	Time Frame for Implementation
Results Area 1—Program implementation support			
Lack of staff within PMUs to coordinate and manage stakeholder participation and communications strategy	Appoint staff to coordinate the implementation of social, gender, stakeholder participation and communications strategy of GCAP/Program within each PMU	PMU	At the start of the Program Q2/Q3 2016
Lack of skills in participatory planning, strategic communication approaches, methods and tools	Provide training for assigned staff and IEC collaborators on participatory planning, strategic communication approaches, methods and tools	PMU	Q2/Q3 2016
Lack of communication materials on GCAP/Program	Develop, pre-test and produce all communication materials needed—videos, posters, leaflets, TV and radio spots, billboards, press releases, learning modules, website, etc.	PMU	Q3/Q4 2016
Low involvement of sectors outside of government in urban infrastructure planning	Implement stakeholders participation plan	PMU	Q3/Q4 2016, and all throughout the Program period
Low awareness about the GCAP/Program and its subprojects among affected communes/ villages, civil society and private sector	Implement systematically phased communications strategy for GCAP/Program	PMU	Q3/Q4 2016, and all throughout the Program period

Source: PPTA Consultants