INTEGRATED SAFEGUARDS DATA SHEET
APPRAISAL STAGE

Report No.: ISDSA15867

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I. BASIC INFORMATION

1. Basic Project Data

Country:	Vietnam	**Project ID:**	P152460
Project Name:	Vinh Phuc Flood Risk and Water Management Project (P152460)		
Task Team Leader(s):	Lixin Gu,Vinh Quang Nguyen		
Estimated Appraisal Date:	15-Feb-2016	**Estimated Board Date:**	29-Apr-2016
Managing Unit:	GWA02	**Lending Instrument:**	Investment Project Financing
Sector(s):	Flood protection (60%), General water, sanitation and flood protection sector (40%)		
Theme(s):	Water resource management (40%), Natural disaster management (25%), Climate change (25%), City-wide Infrastructure and Service Deliv ery (10%)		
Is this project processed under OP 8.50 (Emergency Recovery) or OP 8.00 (Rapid Response to Crises and Emergencies)?	No		

Financing (In USD Million)			
Total Project Cost:	220.00	Total Bank Financing:	150.00
Financing Gap:	0.00		

Financing Source	**Amount**
Borrower	70.00
International Bank for Reconstruction and Development	150.00
Total	220.00

Environmental Category:	A - Full Assessment
Is this a Repeater project?	No

2. Project Development Objective(s)

The development objective of the project (PDO) is to strengthen flood risk management capacity and improve wastewater management in the central catchment of Vinh Phuc Province.

3. Project Description

The Project includes three interlinked components:

Component 1 - Flood Risk Management (estimated cost USD117 million)

- This component improves flood risk management through structural measures in Basin B (including sub-basins B-1, B-2 and B-3) and Basin C. The measures include (i) construction and rehabilitation of three retention lakes with a total area of 260 hectares to increase regulation capacity; (ii) construction of three drainage pumping stations with total capacity of 145 m3 per second and related canals to divert excessive storm water from Basin B to Pho Day and Red River; (iii) dredging key sections along 31.62 km of the Phan River to increase the discharge capacity; and (iv) construction of two flood control gates with associated embankments to prevent storm water from Basin C from entering Basin B.

Component 2 Water Environmental Management (estimated cost USD17 million)

- The long-term objective of this component is to improve the environmental conditions in densely populated small towns and rural communities, as well as the water quality in the Phan River by providing wastewater and drainage services. The measures include the construction and rehabilitation of wastewater collection and treatment facilities in four district towns and 33 rural villages along the Phan River. Given that the source of pollution is mostly from domestic households, this component will focus on intercepting and treating wastewater. Simple and low cost technologies that will not require sophisticated mechanical equipment, high power consumption and complicated operation and maintenance (O&M) will be applied.

Component 3 Implementation Support, Technical Assistance and Institutional Strengthening (estimated cost USD16 million)

- This component supports (i) project implementation including detailed engineering designs, construction supervision, safeguard monitoring, Project Management Office (PMO) support and other related activities; (ii) water resource, flood information and early warning systems, including consulting services, works, equipment and other related activities; (iii) O&M for assets to be built under the project, including training, development of operation manuals, and provision of necessary equipment; and (iv) institutional development for river basin management and water related sectors in an integrated manner.

4. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

1. Vinh Phuc is a land-locked province located in the north of Hanoi. Vinh Phuc is positioned in three main key development regions of Vietnam: the Red River Delta Region, the Hanoi Metropolitan Region, and the Northern Key Economic Region.

2. The project will be developed in two drainage basins in the center and east of Vinh Phuc Province. Due to its low elevation in the Red River floodplain, two thirds of the province is prone to flooding. There is an especially high risk from flooding in the areas of the Phan River basin where the provincial capital city of Vinh Yen and most of foreign direct investment (FDI) zones are located. Frequent floods have caused serious impacts on agriculture in rural areas, the city of Vinh Yen and the industrial zones and enterprises, including significant loss of agricultural and industrial productivity - impacting on livelihoods - and deterioration of infrastructure in both rural and urban areas.

3. The Project works include rehabilitation and dredging of the Phan River and three river networks in Binh Xuyen, construction of pumping stations, regulating lakes, inlet and discharging canals, and Waste Water Treatment

4. The Project plans to finance dredging operations for three natural lakes, including Sau Vo Lake (176.5 ha of total 295 ha), Rung Lake (30.9 of total 150 ha), and Nhi Hoang Lake (from 22.5 ha to an total area of 38.5 ha). The total water surface of the project area is over 5000 ha, of which over 3000 ha is used for aquaculture. Comparatively, the total project surface area of all the lakes under project financing during the dry season is only 410 ha: Sau Vo 250 ha, Rung 140 ha, Nhi Hoang 20 ha. Of the total water surface area under the Project, it is estimated that 180 ha (44%) is currently used by 132 households for aquaculture. There will be some permanent and temporary land acquisition required and dredging activities may also impact current fishery activities. Research undertaken by the ESIA consultant indicates endangered species in Red River are located about 20 km upstream of the Project area. According to information provided by Vinh Phuc DONRE and Department of Agriculture, there are no endangered and rare fish species in the Phan River section within the Project area. No migratory fish species were detected or recorded in the lakes, nor in the Phan, Red, or Ca Lo Rivers.

5. The Project requires dredging of sediments in Phan River, Binh Xuyen river network, Rung Lake, Sau Vo Lake, and Nhi Hoang Lake. In addition, at the construction areas of the proposed pumping stations and Waste Water Treatment Plants (WWTPs), the construction process also requires the removal of surface sediments (sludge) and underlying soil layers. These materials after being dredged will be transported to Kim Xa, and Dong Mong disposal sites. Siting of the disposal sites underwent rigorous alternatives analysis, and sited chosen were located where control capacity is higher, and the construction cost and the number of affected households are lower. The distance from Dong Mong site to the nearest residential area (about three households) is about 500m while the distance from Kim Xa site to the nearest households is about 1km.

6. There is a land subsidence risk at the Dong Mong disposal site as it will be 3m higher surrounding area – as such, appropriate construction measures will be adopted to prevent accidents and protect nearby households. There is no land subsidence risk to Kim Xa disposal site as the material is filled in the low land area.

7. Three pumping stations under the Project will drain into the Red River, directly from Nguyet Duc and Ngu Kien pumping stations and indirectly from Kim Xa pumping station via Pho Day River. The Red River is recognized as an international waterway with total length of 1,149 km originating from China, running through Vietnam before entering East Sea. As such, OP 7.50 has been triggered, and notification will be made to China.

8. The Project also includes construction of five centralized wastewater collection and treatment facilities and some cascade pumping stations which divert water to centralized WWTPs in some towns (two stations in Yen Lac town, one station in Tam Hong town, and two stations in Tho Tang town. For Huong Canh, wastewater will be collected and transported to Quat Luu WWTP). Approximately, each station can serve for 20,000 people. Also included in the Project is construction of 33 small-scaled WWTPs in rural areas, each serving a minimum of 500 people. These WWTPs are distributed along Phan River (within 3 kilometers from the river).

9. Accelerated deterioration of water quality has been observed in Phan River catchment, including rivers and lakes around Vinh Yen City. The main water pollution sources are domestic and

industrial wastewater; organic pollutants are the main source of pollution, especially high level of biological oxygen demand (BOD) and total suspended solids (SS). While industrial zones have their own wastewater treatment facilities, domestic wastewater is discharged without any treatment, especially along the Phan River. In some areas the garbage from the village is thrown on the banks of the rivers and lakes. Surface water quality no longer meets the national Category A standard (for water supply purpose) and, in the dry season, is well below Category B (for irrigation purpose) in some cases.

5. Environmental and Social Safeguards Specialists

Noreen Beg (GEN04)

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6. Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	OP 4.01 is triggered as a category A due to the potential significant, adverse environmental impacts that are sensitive, and diverse associated with the project investments and activities. These include risks associated with flood control measures in the event of failure, resettlement and impact (particularly during construction) on local farming and aquafarming activities, and risk of water pollution from dredging activities and canal rehabilitation. An Environmental and Social Impact Assessment (ESIA) report, a detailed resettlement and compensation plan report, and a development plan report for ethnic minorities have been prepared to ensure the project will be implemented in accordance with the requirements of the World Bank (WB) and applicable national legislation and regulations of Vietnam. In addition, the Project will apply WBG Environmental, Health, and Safety Guidelines. The ESIA process has complied with the WBG's requirements on public consultation and information disclosure for category A projects. Comprehensive Environmental Codes of Practice (ECOPs) for the small-scale urban construction works have been prepared and site-specific impact and mitigation measures have been prepared for each of the project works where impacts and mitigation measures extend beyond the provisions of the ECOPs. Site-specific ESMPs prepared in the ESIA will be utilized by the contractor to be commissioned by the Vinh Phuc Project Management Office (PMO), Vinh Phuc Province and will

		form the basis of site-specific management plans that will be prepared by the contractor and sub-contractors as part of their construction methodology prior to commencement of works. Several key site-specific impacts of the Project have been identified in the ESIA report and mitigation measures, along with ECOPs, are proposed specifically as follows: (a) Risk of erosion and subsidence of the river and lake banks. Mitigation measures include: Conducting geological and hydraulic surveys prior to construction (b) Local inundation impacting local populations. The PMU will ensure that detailed design will provide installation of temporary and permanent drainage to avoid potential flooding, and disruption to the irrigation system in the project area during construction and operation. (c) Impact of dredging process to water quality and aquatic life and downstream users:. (i) The dredging process will be carried out successively in sections, with the application of sheet piles surrounding each section to prevent the impact to other surrounding sections/areas; (ii) Dredging activities shall only be carried out in the dry season; and (iii) Stream diversion will be carried out to ensure that the flow is not being disrupted. (d) Construction of disposal sites. The key impacts due to the construction of disposal sites include the dust, odor and gases generated dredged sludge; improper disposal of contaminated excavated materials to the designated disposal site; and land subsidence risk at Dong Mong disposal site during construction. Mitigation measures include: (a) The disposal of waste at the disposal sites may generate dust; therefore green trees will be planted around the site to minimize dust into the air. Regular spraying will take place. If the disposed sludge materials still generate odors and gases, spray daily with biological products and sprinkle with lime to prevent odor. (b) To prevent the soil erosion and land subsidence risk at Dong Mong disposal site, the site will be divided into 13 cells and material will be filled in successively in each cell. During the disposal process, the cell will be compacted carefully and soil embankment surrounding each cell to prevent soil erosion. Cumulative Impacts: The ESIA conducted a review of related recently completed and ongoing investments in Vinh Phuc to identify possible linkages and potential

		cumulative impacts in relation to the proposed Project In addition to the positive and negative impacts of related infrastructure projects, cumulative impacts of industrial parks, sand extraction and borrow pits on the area's environment were also evaluated in terms of effects on water quality, aquatic biodiversity, the quality of life of local communities, and effects on downstream water use. Cumulative impacts of the ongoing and proposed projects in the Project Area are positive, in that through the installation of waste water treatment plants in both residential areas and industrial parks, the pollution load of untreated waste on the rivers are reduced. Moreover, several projects lead to improved flood control, which has economic and health and safety benefits to local communities. The existence the dredge disposal sites and extrajudicial sand extracting activities in the Project Area does continue to place pressure on river water quality, and it is suggested that Vinh Phuc authorities, in collaboration with the Department of Natural Resources and Environment (DONRE), prepare a management plan to curb and control these activities, and restrict release of these materials into the river.
Natural Habitats OP/BP 4.04	Yes	The Project lies along three rivers. The Phan River originates from Tam Dao, flowing through districts of Tam Duong, Vinh Tuong, Vinh Yen City, Yen Lac before entering Ca Lo River in Huong Canh District and then flowing through Me Linh District (Hanoi) to Cau River. The average width of the river is from 10 m - 30 m, with an average depth of 1.5 m - 3.5 m. The Phan River serves as the main drainage system for the region, and is also a system of large irrigation supplying water for about 8000 ha of farming land. The survey showed no aquaculture activities in the vicinity of the Project area. There are only 8 households fishing on the river during off-season period. The river water quality is now increasingly degraded and polluted by waste water from residential areas, agricultural areas, some craft villages and service businesses. In short, the variety of biodiversity in Phan River is assessed as poor. According to the information provided from Vinh Phuc DONRE and Department of Agriculture and Rural Development (DARD), there is no endangered and rare fish species in the Phan River section at the project area. Neither migratory fish nor catadromous/anadromous species were detected and

		recorded in the project area. The Red River drains water from 3 pumping stations of the project, directly from Nguyet Duc and Ngu Kien pumping stations and indirectly from Kim Xa pumping station via Pho Day River. The river section has an average width of about 1.5 km and depth of 5.0m. The field survey along the river section from Viet Tri (Phu Tho Province) to districts of Vinh Tuong and Yen Lac (Vinh Phuc Province) and Me Linh District (Hanoi) recorded no aquafarming activities while about 50 households live on fishing. This is also the only river in Vinh Phuc having waterway transportation of about 20 trips a day. According to the biodiversity on the existing condition of Red River (2010), there are some endangered species at the Red River confluence area with Da, Thao, and Lo Rivers - which is about 20 km upstream of the project area at Ngu Kien pumping station. Among 91 recognized species, 12 species belong to six families and four genera in the 2007 List of Threatened Species of Vietnam. However, according to the information provided from Vinh Phuc DONRE and Department of Agriculture, there is no endangered and rare fish species in the Red River section at the project area. No migratory fish catadromous/anadromous species is detected and recorded in the project area of influence. It is estimated that a total of discharge flow of 115 m3/s will be pumped from the two Pumping Stations (PSs) of Ngu Kien and Nguyen Duc to Red River and 30 m3/s from Kim Xa PS to Pho Day River. However, water then flows to Pho Day River to Lo River and back to Red River (17 km upstream of Ngu Kien PS discharging canal). Therefore, the water flow in Red River will be increased by a total of 145 m3/s from the 3 PSs, which is insignificant compared to the maximum drainage capacity of 18,000 m3/s in storm season. Ca Lo River in the Project Area has an average river width of 20 m and depth of 1.7 m. There are no aquafarming activities in the river and about 22 households are fishing there during off-season period. Under the project, two control gates, Sat Bridge and Ton Bridge will be constructed. During the flood season, these

		gates will prevent flood water flowing from Basin B to Ca Lo River. These will result in improved flood control measures. According to the information provided from Vinh Phuc DONRE and Department of Agriculture, there is no endangered and rare fish species in the Ca Lo River section at the project area. No migratory fish and catadromous/anadromous species is detected and recorded in the project are: Sau Vo Lake The lake has a total area of 295 ha with average depth of 1.8m. In dry season, the area shrinks to about 250 ha. The area being dredged and rehabilitated under the Project financing has a total area of 176.5 ha, of which 21 ha is currently being used for aquaculture by 12 households every season (both dry and rainy) under the contract with town people committee renewed annually; and a lakeside area of 45 ha which is used for farming in dry season by 258 households. The survey found that the fish farmed by local households include barb, tilapia, grass carp and common carp. Other aquatic species are shrimp, crab, goby fish etc. Nhi Hoang Lake Nhi Hoang Lake has an area of 22.5 ha with average depth of 1.8 m. In dry season, the area of the lake is 20 ha with a depth of average 1.6 m. There are about 35 households fish-farming in contract basis of barb, tilapia, grass carp and common carp. The lake is surrounded by permanent agricultural land. Under the VPFRM, the Nh i Hoang lake will be dredged and rehabilitated to an area about of 38.5 ha, to the depth of 1.8 to 2.0 m, with the capacity of 750,000 m3. Both lakes are currently fish farmed on annual contract basis (and 35 households in Nhi Hoang Lake, 20 ha). Fish raised include barb, tilapia, grass carp and common carp. Other aquatic species are shrimp, crab, goby fish etc. No endemic or migratory species are found in these lakes. Rung Lake Rung Lake has a total area of 150 ha (surface area of about 140ha) with average depth of 1.5 m. During the dry season, the lake area is 140 ha. The lake is currently fish

		farmed on a contractual basis by 85 households, 139 ha. This lake is currently divided into several small ponds for aquafarming purpose. The lake is surrounded by residential areas of communes of Tu Trung, Ngu Kien and Vu Di and farming areas. Recently, Indian carp fish have been introduced into the lake. The project activities such as dredging river and lakes, embankment works, widening canals and land clearing will take place primarily in agricultural areas, which as noted above are already subject to heavy human intervention. However, to mitigate the impact to water quality and aquatic life and downstream users, the following measures shall be applied: (i) the dredging process will be carried out successively in section, with the application of sheet piles surrounding each section to prevent the impact to other surrounding sections/area; (ii) Dredging activity shall only be carried out in dry season; (iii) and stream diversion will be carried out to ensure that the flow is not being disrupted.
Forests OP/BP 4.36	No	The project will not involve any forest restoration, plantation development, changes in forest use or management or protection. There are no forest areas that could be affected, hence OP/BP 4.36 is not triggered.
Pest Management OP 4.09	No	Livelihoods of the people is currently based on agriculture and fisheries, and industry. The Government of Vinh Phuc planning focuses on urbanization and industrial development. Livelihood of local residents will sift rapidly from agricultural based towards industrial, commercial, and services. Based on the statistical on the economic differentiation in Vinh Phuc province, the structure of proportion of this sector has reduced from 14.9 % in 2010 to 9.4% in 2015. It is confirmed that no livelihood activities (in 3 RAPs) involved usage and/or Livelihoods of the people is currently based on agriculture and fisheries, and industry. The Government of Vinh Phuc planning focuses on urbanization and industrial development. Livelihood of local residents will sift rapidly from agricultural based towards industrial, commercial, and services. Based on the statistical on the economic differentiation in Vinh Phuc province, the structure of proportion of this sector has reduced from 14.9 % in 2010 to 9.4% in 2015. It is confirmed that no

		livelihood activities (in 3 RAPs) involved usage and/or potential increased use of pesticide. Project interventions may reduce the annual loss on agricultural yield caused by flooding but not increase annual crop growth or expand agricultural land. In short, project intervention will not lead to increase in the use of pesticides, either directly or indirectly.
Physical Cultural Resources OP/BP 4.11	Yes	In the Project area, there are several graveyards that will need to be relocated from the Dong Mong disposal site. As the cemetery area was flooded during the survey period; it was not possible to ascertain the exact number of graves to be relocated. There is also a risk that Project activities will have an impact on Thien Phuc church and the Great Banyan tree (in Chua village) in Van Xuan commune. Given that the Project involves large excavation activities, chance find procedures are detailed in the ESIA, and will be incorporated into bidding documents.
Indigenous Peoples OP/ BP 4.10	Yes	Ethnic minority people, as per OP 4.10, were identified in the subproject area of Binh Xuyen. An estimated number of 20 Ethnic Minority (EM) households could be potentially affected as a result of the subproject implementation. Thus, an Ethnic Minority Policy Framework (EMPF) was prepared on the basis of the results of the social assessment, and free, prior, and informed consultation with EMs in the above mentioned area. The EMPF guided the preparation of the Binh Xuyen EMDP for the first-year subproject, the instrument that will also be used for the preparation of EMDPs identified during project implementation. Public consultations with the EM communities in the subproject area were conducted between September and October 2015 to assess benefits and potential impacts on livelihoods, and determine the action/mitigation measure, which could be summarized as follows: (i) Benefits from the rehabilitation and dredging of three river network in Binh Xuyen: the Cau Bon Tranh and Ba Hanh rivers, include increasing the drainage capacity in the project area, improving the rivers ecological quality, reducing flooding, and improving water quality for households' provision, and irrigation. (ii) Adverse impacts identified entail mainly temporary impacts to fishing downstream, and to agricultural and animal breeding activities on adjacent land to the rives intervened, impacting adversely

		the EMs livelihoods. In addition, increased traffic, limited mobility, transportation of construction materials were identified as sources of impacts, as well as potential issues as a result of incoming workers. Impacts, were assessed, consulted and addressed in the RAP, and mitigations and compensation incorporated in the EMDP. For example, a recommendation for considering dredging operation during the dry season when fishing activities are minimal. Compensation to the affected EM, when impacts are considered unavoidable were addressed by the RAP. The RAP will be updated during subproject implementation, and before the works initiation to reflect impacts in detail. The process of consultation, participation and information disclosure will continue to be conducted during the rest of the project cycle. During project implementation, new subprojects to be identified will be subjected to social screening and required social assessments. New subprojects will be financed only when a broad community support from EMs are granted, on the basis of free, prior, and informed consultation at the subproject area.
Involuntary Resettlement OP/BP 4.12	Yes	The project will require temporary and permanent involuntary land acquisition for dredging and construction operations. Therefore a Resettlement Policy Framework (RPF) was prepared in accordance with OP 4.12. The RPF guided the preparation of three first-year subprojects, and will do for the subsequent RAPs to be identified during project implementation. On the basis of the 3 first-year subprojects, an estimated number of 1,969 households under the three year-one subprojects would be potentially affected – both permanently and temporarily (about 3% of this would be temporarily affected). Of the total 1,916 households who are permanently affected with agricultural land, 952 households (about half) would lose more than 20% of their agricultural land.. The RAP's Eligibility Matrix defined a compensation to be considered for each category of impact, including those affected by 20% of their agricultural land in which cases if replacement land is no available the cash compensation should be at replacement cost. The land valuation should be carried out by an external (independent) land valuation. There is no physical relocation anticipated for the three first-year subprojects, nor impacts to local business, to be confirmed during detail design stage. At this stage a detailed measured survey (DMS) is carried out, stipulating the itemize impacts. With regards to impact (temporary) related to fishing, aquaculture, a detailed

		consultation and Social Assessment will be conducted for households that will be affected by the dredging of the three lakes and the river systems. The consultation and detailed SA will be done when the detailed design and the construction measures are available to facilitate the detailed social assessment – both scope, magnitude of the social impact of the subprojects on the affected households, and updated of mitigation measures. These affected households will include those who do fishing and aquaculture activities in the subproject lakes and rivers, and those who do farming in the riparian, which are using lake and river water for their crops. The SA findings will be used to develop plan to address identified impacts on these households, including impacts related to livelihood, and impacts outside involuntary land acquisition, resettlement, among other things. In terms of graveyard, as part of census and detailed measurement survey, a detailed survey of graveyards in the subproject area will be undertaken during project implementation when the detailed design is available. The RAP will be updated to reflect findings related to graveyard prior to RAP approval and construction.
Safety of Dams OP/BP 4.37	Yes	Two large earth-filled dams with reservoirs are upstream of rivers in basin C (which contains activities within the Project area). The first is Xa Huong, the second highest dam in Vietnam, in Xa Huong village, Minh Quang commune, Tam Dao district, Vinh Phuc province. With a maximum height of 41 meters, and the total design storage of 14.13 million m3, which places it in the category of a large dam under OP 4.37. The second dam upstream is Thanh Lanh, located in Trung My commune, Binh Xuyen District, Vinh Phuc. With a total reservoir storage of 10.62 million m3, and a maximum dam height of 29 meters, it is also categorized as a large dam under OP 4.37. As required by the Bank, an independent dam safety team, comprising competent specialists, prepared dam safety reports for both dams in November 2015 and updated in December 2015 based on the discussion with the Bank team dam safety specialist. The reports include the following: (a) an inspection and evaluation of the safety status of the existing dams, their appurtenances, and their performance history; (b) a review and evaluation of the owners' operation and maintenance procedures; and (c) findings, conclusions and recommendations for remedial work or safety-related measures necessary to upgrade the

		existing dams to an acceptable level of safety. Based on the conclusions of these two reports, Xa Huang Dam was classified as an unsafe dam, which requires major remedial works (including dam body seepage control, upgrade of spillway, renovation of irrigation tunnel and its intake, and installation of instruments), and Thanh Lanh Dam as a safe dam, which requires only minor works (including installation of instruments and monitoring devices). According to the updated DSRs, seepage control works (curtain grouting as Phase I and blanket grouting on upstream slope as Phase II) of Xa Huong Dam were completed in January 2016 and construction of spillway upgrade started in January 2016 and will be completed in April 2016. Upon the completion of spillway upgrade, the Xa Huong Dam will be upgraded to an acceptable safety level. To complete all proposed remedial works, Vinh Phuc Province has submitted to Ministry of Agriculture and Rural Development (the MARD) an application for including the remaining minor dam safety-related works, such as renovation of irrigation tunnel and its intake of Xa Huong Dam and installation of instruments of both dams, in another Bank supported project, i.e. Vietnam Dam Rehabilitation and Safety Improvement Project. The application is under DARD's screening process. In the meantime, the Vinh Phuc PPC has committed to allocating government budget to carry out these remaining works in case this proposal is not materialized. In addition, according to the reports, adequate Operational and Maintenance Manuals (O&M Manual) and Emergency Preparedness Plans (EPP) were required to be prepared and put in place for these two dams as immediate actions to be taken. Vinh Phuc Province hired the same dam safety team to prepare the O&M Manuals for these two dams and selection of the consultant to prepare the EPPs for two dams is in progress. A detailed action plan on dam safety related activities is under preparation and will be submitted to the Bank prior to the project negotiation.
Projects on International Waterways OP/BP 7.50	Yes	Vinh Phuc is a land-locked province located in the upper reaches of the Red River Delta. The distance from the Red River at the project location (Vinh Phuc province) is approximately 250 km from where the Red River enters Vietnam from China in the Lao Cai province. In Project component 1, two of the three proposed pumping stations, one with capacity of 80 cubic meters per second and the other 35 cubic meters per second, will be built for flood

		control purpose. They will discharge water to the Red River. The Red River is considered an international waterway to which the World Bank's Operational Policy OP 7.50, Projects on International Waterways applies (Attachment 1). OP 7.50 requires that a notification such projects be made to all riparian states, in this instance to China. At the request of the Government of Vietnam, the World Bank has undertaken such notification to China in accordance with Paragraph 4 of OP 7.50. The project's feasibility study has confirmed that there will be no effect upstream of the discharge point, and specifically no impact on the Red River inside the territory of China. Although there will be changes in the hydrology of the Red River, due to flood risk management measures, there will be no net abstraction of water from the Red River.
Projects in Disputed Areas OP/BP 7.60	No	The project is located in Vinh Phuc province. There are no Disputed Areas within the Project boundaries. The policy is not triggered.

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Project activities have positive impacts for the control and minimization of floods and for the improvement of the riverine environment through the establishment of WWTPs, all activities aligned with the masterplan of Vinh Phuc urban development until 2030 with vision to 2050.

Several key site-specific impacts of the Project have been identified in the ESIA report and mitigation measures, along with ECOPs, are proposed specifically as follows:

(a) Risk of erosion and subsidence of the river and lake banks.
(b) Localized flooding impacting local populations.
(c) Impact of dredging process on water quality and aquatic life and downstream users.
(d) Construction of disposal sites. The key impacts due to the construction of disposal sites include the dust, odor and gases generated dredged sludge; improper disposal of contaminated excavated materials to the designated disposal site; and land subsidence risk at Dong Mong disposal site during construction.

Transportation of dredged material to disposal sites, if not properly organized and scheduled, will expose sensitive receptors to noise and dust, and restrict access, This impact is temporary and will occur during the construction period. Sensitive receptors include several schools, one market, one clinic and one pagoda at a distance of 30-70m to the transportation routes. If the transport

Due to heavy aquaculture in the three regulatory lakes, and the fact that they do not contain migratory species according to DONRE and DARD, impacts on aqua fauna in the lakes caused by dredging activities will not be significant. A detailed fishery survey of the three lakes, including fish diversity and productivity (open and capture fishery) will be undertaken prior to dredging and impacts of dredging and the project as a whole on fishery be further assessed and ESMP updated based upon this survey/study.

A dam safety assessment report has been completed during project preparation for Thanh Lanh and Xa Huong. The calculation results showed that the Project interventions do not directly affect these dams. However, as the dams are located upstream of the project area their safety is likely to have an impact on the project area. The dam safety reports for Xa Huong and Thanh Lanh Reservoirs concluded that Xa Huong Dam is an unsafe dam, which requires major remedial works, and Thanh Lanh Dam is at an acceptable condition, with minor remedial works. Based on the operational rules as mentioned, Xa Huong Reservoir shall be operated at a safe water level with the limit set forth in the operational rules as prepared and approved by the relevant authorities until the major remedial works have been successfully completed. Details of the evaluation and measures to ensure dam safety are described in the safety assessment report for dams of Thanh Lanh and Xa Huong.

A Social Assessment (SA) was conducted alongside the Environmental Assessments of the project, and on the basis of the Feasibility Study. The findings indicate that the overall project's impacts are positive. However, some adverse impacts and permanent are not avoidable. These include: a) permanent loss of land (mostly for agricultural land) to allow construction of small-scale roads, dredging of lake, river) and b) (b) temporary impacts (in the project area and downstream users), affecting livelihoods and causing income loss due to dredging; and temporary impacts on farming and fishing activities, due to construction operations. Both permanent and temporary impacts (on land and farming activities) will be compensated for - as per project's RPF. Efforts will be made through considering technical engineering design options, and construction measures, to minimize the adverse impacts.

Even though EMs are mainly present in the province mostly upstream, few groups are present and scattered in the project area or downstream. In the subproject of Binh Xuyen 3 rivers system (first-year subproject), the EM groups were consulted and an Ethnic Minority Development Plan (EMDP) was prepared on the basis of the results of a social assessment and consultations. The results of the analysis for the Binh Xuyen 3 rivers system subproject confirmed that the overall impact from this subproject is positive, whereas the anticipated negative impacts could be avoided during construction. Consultations with EMs were conducted in a free, prior and informed manner including the project activities, potential impacts (adverse and beneficial), and soliciting their feedback, views, concerns and recommendations. With the information available and provided to the EMs consulted, they indicated their broad community support for subproject implementation

Gender analysis was conducted as part of SA for each subproject, and a gender action and monitoring plan was developed to promote gender equality and community participation.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

Aquaculture is expected to be limited by expanding urbanization as detailed in the Vinh Phuc strategic planning process. Project interventions may reduce the annual loss on agricultural yield

caused by flooding but not increase annual crop growth or expand agricultural land, as the focus will be on increased urbanization, which must be sustainably managed to minimize increases in air and water pollution. The ESIA conducted a review of related recently completed and ongoing investments in Vinh Phuc to identify possible linkages and potential cumulative impacts in relation to the proposed Project. In addition to the positive and negative impacts of related infrastructure projects, cumulative impacts of industrial parks, sand extraction and borrow pits on the area's environment were also evaluated in terms of effects on water quality, aquatic biodiversity, the quality of life of local communities, and effects on downstream water use.

Cumulative impacts of the ongoing and proposed projects in the Project Area are positive, in that through the installation of waste water treatment plants in both residential areas and industrial parks, the pollution load of untreated waste on the rivers are reduced. Moreover, several projects lead to improved flood control, which has economic and health and safety benefits to local communities. The existence the dredge disposal sites and extrajudicial sand extracting activities in the Project Area does continue to place pressure on river water quality and it is suggested that Vinh Phuc authorities, in collaboration with the Department of Natural Resources and Environment, prepare a management plan to curb and control these activities, and restrict release of these materials into the river.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

A detailed alternatives analysis was conducted, examining scenarios including a without project option, and different technical options for the investment components of the Project.
In the absence of the proposed project, the development of residential areas, urban and industrial areas with associated ground clearance is likely to reduce the area of existing lowlands that in turn shrink capacity to regulate regional water flow. The maximum flooding level will likely lead to greater flooding for the project area. In the absence of the WWTPs water pollution in the rivers will worsen.

THE 'WITH PROJECT' ALTERNATIVE

1. Alternatives for scale and capacity of pumping stations

With each sub-basin B1, B2 and B3, four alternatives to capacity and scale of construction of pumping stations were considered. Precipitation frequency and design flow of repeating floods were calculated for 1 year, 2 years, 3 years, 5 years, 10 years, 15 years, 20 years, and 25 years. Scale and capacity of the pumping stations and supporting infrastructure was based on drainage capacity, controlled flood area, and the potential environmental and social impacts.

2. Alternatives for siting of pumping stations

For each pumping station several alternatives to siting were proposed and considered with its auxiliary construction such as inlet canal, outlet canal, regulating lake in front of the station etc. The consultant preparing the Feasibility Study analyzed social and environmental impacts regarding soil excavation and backfilling volume, acquired land area, geographical conditions and durability of the construction work and possibility of utilizing the existing works. Alternatives to siting were proposed and considered with its auxiliary construction such as inlet canal, outlet canal, regulating lake in front of the station etc.

3. Alternatives for disposal sites

Three locations were initially considered as disposal sites for dredged material. There were three disposal sites proposed for the Project: namely Kim Xa, Vinh Ninh, Dong Mong.

- For Dong Mong site, no alternative was considered. The only option for Dong Mong disposal site is located within the administrative boundary of Huong Canh Town in Binh Xuyen District. The disposal site area is 54.31 ha and of agricultural land without any house or structure built thereon. This conclusion stemmed from consideration of the local environment and technical requirements and was reached in close consultation with local people and authorities

- Kim Xa site is located in the lowlands within Pho Day River alluvial land area with an initial design area of 10.3ha. However, flood drainage of Pho Day River would be affected when flood levels surpass 11.0m elevation. Hence it was recommended that dredged material with heavy metal content not exceeding QCVN 03:2008/BTNMT for agricultural land may be disposed in the site but the elevation of the disposal site should not exceed the surrounding area (+ 11.5m).

- Vinh Ninh disposal site is located outside the secondary dyke of Red River, at the flood plain of the Red River. The disposal site was proposed to be designed average elevation of +15.58 m while the elevation of the surrounding floodplain area is only 12.80 m; which leads to the consequence that the Red River flood drainage capacity will be greatly affected. Therefore, the ESIA recommended that Vinh Ninh disposal site be removed from options for consideration.

Based on these recommendations, the Kim Xa disposal site area has been redesigned to 3.82ha with an elevation of 11.5m and Vinh Ninh disposal site will not be used for the Project.

Alternatives analysis to the types of drainage system for towns and rural areas

Three alternatives were considered for wastewater collection and treatment systems proposed for both towns and rural areas, including 1) using existing combined drainage system which has no interceptor, 2) construction of new separated system and 3) using existing combined drainage system. Considering economic costs and environmental and social impacts, the third option was selected, i.e., the efficiency of wastewater treatment and collection are relatively good, the cost is acceptable and it is consistent with the planning.

Alternatives to technologies used for the wastewater collection and treatment system

Based on projection of population, estimate of water consumption and average wastewater volumes in the rural areas and towns, and the scale of wastewater treatment facilities the proposed option for treatment technology was the choice of a septic tank in combination with ecologically sensitive plant filtration. The process will be wastewater → trash filter → septic tank → plant filtration → recipient source.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

Several site-specific impacts of the Project have been identified in the ESIA report and mitigation measures, along with ECOPs, are proposed specifically as follows:

Risk of erosion and subsidence of the river and lake banks. Mitigation measures include:

Conducting geological and hydraulic surveys prior to construction

Localized flooding impacting local populations. Construction sites are mostly located in areas adjacent to waterways or in agricultural areas (consisting of in-field irrigation canals). Therefore, the construction activities could have an impact on regional flow regimes and cause local flooding. Mitigation measures are proposed that before construction of each building, the contractor must perform the diversion measures to ensure the local flow and the construction location shall be well fenced to prevent construction materials from entering into surrounding waters. The construction process shall be limited to the dry season. The PMU will ensure that detailed design will provide installation of temporary and permanent drainage to avoid potential flooding, and disruption to the irrigation system in the project area during construction and operation.

Impact of dredging process to water quality and aquatic life and downstream users. (i) The dredging process will be carried out successively in sections, with the application of sheet piles surrounding each section to prevent the impact to other surrounding sections/areas; (ii) Dredging activities shall only be carried out in the dry season; and (iii) Stream diversion will be carried out to ensure that the flow is not being disrupted.

Construction of disposal sites. The key impacts due to the construction of disposal sites include the dust, odor and gases generated dredged sludge; improper disposal of contaminated excavated materials to the designated disposal site; and land subsidence risk at Dong Mong disposal site during construction. Mitigation measures include: (a) The disposal of waste at the disposal sites may generate dust; therefore green trees will be planted around the site to minimize dust into the air. Regular spraying will take place. If the disposed sludge materials still generate odors and gases, spray daily with biological products and sprinkle with lime to prevent odor. (b) To prevent the soil erosion and land subsidence risk at Dong Mong disposal site, the site will be divided into 13 cells and material will be filled in successively in each cell. During the disposal process, the cell will be compacted carefully and soil embankment surrounding each cell to prevent soil erosion.

Dam Safety: The project does not involve the construction of any new dam. However, there are dams in the project area and two of them, i.e. Xa Huong Dam and Thanh Lanh Dam, are located upstream of project supported structures. During the project preparation and to comply with the requirements of OP/BP4.37, the Vinh Phuc Province engaged a dam safety review team led by a competent dam safety expert to conduct the dam safety review and two dam safety assessment reports were prepared and submitted to Vinh Phuc Province. Based on the conclusions of these two reports, Xa Huang Dam was classified as an unsafe dam, which requires major remedial works, and Thanh Lanh Dam as a safe dam, which requires only minor remedial works. In addition, proper Operational and Maintenance Manuals, Reservoir Operational Rules and Emergency Preparedness Plans were required to be prepared and put in place for these two dams as immediate actions to be taken, which are detailed in the Report on Dam Safety and the ESIA.

Social/resettlement: Since subprojects will be identified during the project implementation phase, a framework approach has been adopted for the project. Vinh Phuc PMO prepared a Resettlement Policy Framework (RPF), and an Ethnic Minority Policy Framework (EMPF) to guide the preparation of RAP and EMDP to ensure where land acquisition (both permanent and temporary) are not avoidable, compensation is provided to the affected households and their livelihoods are not worsened off as a result of the project.

Three RAP and one EMDP were prepared during project preparation for the three first-year sub-projects. All safeguards documents for the three first-year subprojects will be further updated during the detailed engineering design, based on additional site specific data collection and detailed assessment of impacts.

Vinh Phuc has limited experience in implementing safeguards instruments of World Bank funded projects. The timely preparation of the three RAPs and the EMDP has demonstrated capacity for the preparation of safeguards documents. During project preparation, a PMO to support project preparation, has been established under the Vinh Phuc Department of Investment and Planning. This PMU will be upgraded to report directly to Vnh Phuc PPC and continue to operate as a focal team responsible for implementation of safeguards documents, as well as for obtaining the necessary approvals, from the World Bank and from provincial Government of the mentioned related safeguards.

For project implementation, it is anticipated that the enhanced environment and social safeguards implementation support given the nature of the project and limited counter-part capacity, will be required from the Bank.

It is anticipated that PMO will hire the services of a local Environment & Social firm to support the review the safeguards documents and also to support the supervision of the implementation of the ESIA and the social instruments. In addition, an Independent Third Party Monitor will be engaged by PMO to carry out regular, independent monitoring and evaluations of subproject RAPs, EMDP(s), EMPs, and others, to ensure implementation compliance with the approved safeguards instruments, as per de defined Bank's policies.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The principal project direct beneficiaries and stakeholders are households in the affected the subproject's river basins who will benefit from reduced flooding and improved environmental conditions (management of water pollution) as a result of Project interventions.

Key other stakeholders are mainly different Vinh Phuc People's Committee and their functional departments such as Department of Planning and Investment, Department of Agriculture and Rural Development (DARD), Department of Natural Resources and Environment (DONRE), water sector practitioners such as irrigation, water supply and wastewater companies, private owners, consultants, and contractors.

Two public consultations were carried out during the preparation of project ESIA, the first on the 15th August 2015, and the second on the 30th December 2015. In line with the Government's consultation procedures the first consultation was conducted to collect opinions from Department of Planning and Investment (DPI), Department of Natural Resources and Environment (DONRE), Department of Construction (DOC), DOT (Department of Transportation), DARD (Department of Agriculture and Rural Development), representatives from 7 districts/city of Vinh Yen, Phuc Yen, Tam Duong, Tam Dao, Binh Xuyen, Yen Lac and Vinh Tuong. 229 participants took part, including leaders of PCs of communes, wards, townships, community representatives, and leaders of hamlets/neighborhoods in 56 wards/communes/townships in the project area. All comments and concerns expressed during the consultation have been taken into account during the preparation of the project's feasibility studies. The second consultation focused on the results of the impact assessment and the proposed mitigation measures.

The RPF, EMPF, SA, 3 RAPs and one EMDP was disclosed in Vinh Phuc Department of Planning and Investment's website(http://sokhdt.vinhphuc.gov.vn/noidung/tintuc/Lists/ThoiSuTongHop/View_Detail.aspx?ItemID=87) on November 24, 2015 and locally at project commune on November 24, 2015. The English version of these documents were also disclosed on Bank's InfoShop on November 17 November 2015 (RPF, EMPF), and November 19 November 2015 (three RAPs, one EMDP), and November 20 November 2015 (SA).

The ESIA was disclosed in-country on December 21 2015, and in InfoShop on December 30, 2015. The ESIA has also been disclosed to the local authorities and people in the Project area and constructive and mostly positive comments were received from stakeholders consulted.

Extensive consultations were conducted at subproject level, with both adversely affected households and beneficiaries. The consultation results were the basis for the preparation of the social safeguards frameworks, the RAPs and EMDP. During consultations, participants expressed their support for investments under the project because of the overall benefit of the sub-projects, and the project as a whole.

Participants also expressed their concerns about receiving adequate compensation rates related to land acquisition as well as the need to have the required measures to minimize the impacts during construction phase. All the local concerns and recommendations were incorporated into the instruments prepared (frameworks, RAPs and EMDP).

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other	
Date of receipt by the Bank	30-Dec-2015
Date of submission to InfoShop	30-Dec-2015
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	30-Dec-2015
"In country" Disclosure	
Vietnam	21-Dec-2015
Comments:	
Resettlement Action Plan/Framework/Policy Process	
Date of receipt by the Bank	11-Nov-2015
Date of submission to InfoShop	17-Dec-2015
"In country" Disclosure	
Comments:	
Indigenous Peoples Development Plan/Framework	
Date of receipt by the Bank	11-Nov-2015
Date of submission to InfoShop	17-Nov-2015
"In country" Disclosure	
Comments:	
If the project triggers the Pest Management and/or Physical Cultural Resources policies, the	

respective issues are to be addressed and disclosed as part of the Environmental Assessment/ Audit/or EMP.
If in-country disclosure of any of the above documents is not expected, please explain why:

C. Compliance Monitoring Indicators at the Corporate Level

OP/BP/GP 4.01 - Environment Assessment			
Does the project require a stand-alone EA (including EMP) report?	Yes [×]	No [ ]	NA [ ]
If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?	Yes [×]	No [ ]	NA [ ]
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	Yes [×]	No [ ]	NA [ ]
OP/BP 4.04 - Natural Habitats			
Would the project result in any significant conversion or degradation of critical natural habitats?	Yes [ ]	No [×]	NA [ ]
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?	Yes [ ]	No [ ]	NA [×]
OP/BP 4.11 - Physical Cultural Resources			
Does the EA include adequate measures related to cultural property?	Yes [×]	No [ ]	NA [ ]
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?	Yes [×]	No [ ]	NA [ ]
OP/BP 4.10 - Indigenous Peoples			
Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?	Yes [×]	No [ ]	NA [ ]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [×]	No [ ]	NA [ ]
If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit or Practice Manager?	Yes [×]	No [ ]	NA [ ]
OP/BP 4.12 - Involuntary Resettlement			
Has a resettlement plan/abbreviated plan/policy framework/ process framework (as appropriate) been prepared?	Yes [×]	No [ ]	NA [ ]
If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?	Yes [×]	No [ ]	NA [ ]
Is physical displacement/relocation expected? 5900 Provided estimated number of people to be affected	Yes [×]	No [ ]	TBD [ ]

Is economic displacement expected? (loss of assets or access to assets that leads to loss of income sources or other means of livelihoods) 2850 Provided estimated number of people to be affected	Yes [×] No [ ] TBD [ ]
OP/BP 4.37 - Safety of Dams	
Have dam safety plans been prepared?	Yes [×] No [ ] NA [ ]
Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?	Yes [×] No [ ] NA [ ]
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	Yes [×] No [ ] NA [ ]
OP 7.50 - Projects on International Waterways	
Have the other riparians been notified of the project?	Yes [×] No [ ] NA [ ]
If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?	Yes [ ] No [×] NA [ ]
Has the RVP approved such an exception?	Yes [ ] No [ ] NA [×]
The World Bank Policy on Disclosure of Information	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [×] No [ ] NA [ ]
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes [×] No [ ] NA [ ]
All Safeguard Policies	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [×] No [ ] NA [ ]
Have costs related to safeguard policy measures been included in the project cost?	Yes [×] No [ ] NA [ ]
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes [×] No [ ] NA [ ]
Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes [×] No [ ] NA [ ]

III. APPROVALS

Task Team Leader(s):	Name: Lixin Gu,Vinh Quang Nguyen	
Approved By		
Safeguards Advisor:	Name: Peter Leonard (SA)	Date: 01-Mar-2016

Practice Manager/ Manager:	Name: Ousmane Dione (PMGR)	Date: 01-Mar-2016