

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC13400

Project Name	Vinh Phuc Flood Risk and Water Management Project (P152460)
Region	EAST ASIA AND PACIFIC
Country	Vietnam
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 Delivery (10%)
Lending Instrument	Investment Project Financing
Project ID	P152460
Borrower(s)	Vinh Phuc Provincial People Committee
Implementing Agency	Vinh Phuc Planning and Investment Department
Environmental Category	A-Full Assessment
Date PID Prepared/ Updated	13-Feb-2015
Date PID Approved/ Disclosed	13-Feb-2015
Estimated Date of Appraisal Completion	
Estimated Date of Board Approval	29-Mar-2016
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

1. Vietnam's record on economic growth and poverty reduction has been remarkable. Over the last two decades, the country has recorded among the highest growth rates in the world, which in turn enabled poverty reduction at record pace. GDP growth, however, fell from an average rate of 7.3 percent during 2000-07 to 5.8 percent during 2009-2013, and came in at an estimated 6.0 percent in 2014. This reduction in growth rates is linked to short term weakness in domestic demand and, in the longer term, to structural problems in state-owned enterprises and the banking sector, sluggish domestic private investment, skills shortages, and gaps in infrastructure and trade logistic services.

2. The historic economic growth in Vietnam during the last two decades has been accompanied by

pronounced structural changes at the aggregate (macro) level. Twenty years ago, Vietnam was primarily rural, with nearly 80 percent of the population living in the countryside and only 20 percent residing in cities and towns. In terms of GDP, slightly more than 40 percent of the economy was generated by agriculture. Growth in the agricultural sector has played an important role in Vietnam's development success. Nonetheless, its share of GDP has fallen to half of what it was in the early 1990s, and in 2010 contributed only 20 percent of GDP. Industry, which includes manufacturing, construction, and utilities, has been the most rapidly growing and dynamic sector and currently makes up 38 percent of GDP. Services contribute 42 percent, modestly higher than the level in 1992.

3. The changes in the structure of the economy are largely mirrored in the composition of employment in Vietnam. In 1992, agriculture was the primary source of employment for three-quarters of the population while only 10 and 15 percent, respectively, in industry and services. Today, the share of the labor force working in agriculture has fallen below 50 percent, while the share in both industry and services has doubled. Urbanization, aided by increasing migration from the countryside, has increased rapidly with a population growth rate of 3 percent annually between 1999 and 2011. The urban population is currently 32 percent of the total population and is expected to reach 40 percent by 2020.

4. Poverty reduction in Vietnam has been very impressive. Using a "basic needs" poverty line initially agreed in the early 1990s, the poverty headcount fell from 58 percent in the early 1990s to 14.5 percent by 2008, and by these standards was estimated to have been below 10 percent by 2010. Using the "new" higher poverty line in 2010, the overall poverty rate fell from 20.7 percent to 17.2 percent in 2010-2012. The drop was most pronounced in rural areas – where it fell from 26 percent to 22.2 percent. Poverty also fell in urban areas, from 6.0 percent to 5.4 percent. Similar progress in the face of steadily rising incomes is evident when assessed by "international" poverty limits of US \$1.25 and US\$2.00 person/day (2005 PPP). Progress has also been substantial in other dimensions of the human development index, ranging from high primary and secondary enrolments to improvements in health status and reduced morbidity and mortality. Vietnam has achieved, and in some cases surpassed, many of the Millennium Development Goals.

5. Long-term growth in Vietnam has been fairly equitable, and the country has consistently achieved "shared prosperity" since the early 1990s. Inequality measured using the Gini coefficient, rose modestly from the early 1990s through 2004 and then stabilized before dropping slightly in the most recent data. In 2012, Vietnam's income Gini coefficient was 39.4, placing it in the middle of the global Gini distribution. In contrast, China's Gini coefficient has steadily risen since the onset of economic reforms in the 1980s and remained high at 47.4 in 2012. The World Bank has used the growth rate of the mean income of the bottom 40 percent as a measure of shared prosperity. By this metric, Vietnam has done extremely well: between 1993 and 2012: incomes of the bottom 40 grew at an annual rate of 8.9 percent, exceeding the 7 percent growth rate of the top 60 percent.

Sectoral and Institutional Context

6. Vinh Phuc is a land-locked province which is adjacent to Hanoi. The provincial city, Vinh Yen, is about 60 km away from Hanoi. Vinh Phuc is positioned in three main key development regions of Vietnam: Red River Delta Region, Hanoi Metropolitan Region, and Northern Key Economic Region. Vinh Phuc has a population of about 1 million and 77.6 percent lives in rural areas (2013 data).

7. Vinh Phuc is hydraulically divided into three drainage basins: (i) Northwest Basin (Basin A); (ii) Central and South Basin (Basin B); and (iii) Northeast and East Basin (Basin C). These sub basins are illustrated in the map in Annex 3. Basin A is western part of the province. This basin drains to the Pho Day River, which then converges with Lo River – an upstream tributary of the Red River. Basin B is the central part of the province where most of the economic and administrative activities are located. Basin B drains to the Phan River and from there to the Ca Lo River. Along the Phan River, basin B can be divided into 3 sub-basins: sub-basin B1 upstream of the Phan River, sub-basin B2 and sub-basin B3 downstream of the Phan River. Basin C is eastern part of the province and incorporates the hilliest areas where rainfall runoff to Ca Lo River flows downstream to the Cau River about 70km from Vinh Phuc. The confluence of the Phan River with Ca Lo River is in Nam Vien Commune, Phuc Yen Town. The flooding in Vinh Phuc occurs mainly in Basin B, due to rainfall within that catchment, interaction with Basin C and downstream tidal effects. Basin A is hydraulically independent and does not contribute to the flooding in Basin B and Vinh Yen City.

8. Vinh Phuc has recorded impressive economic growth in the last two and half decades, and has transformed itself into an industrial hub of the Red River Delta. Current GDP per capita in Vinh Phuc province was VND 42 million in 2011 and 52 million in 2012, higher than the national level of VND 36 million. The provincial poverty incidence in 2012 was 7.3 percent (GSO, income-based measure) lower than the national level of 11.1percent. Annual growth of industry and construction, which has been consistently much greater than 10 percent, has been the key driver of provincial economic development. The share of industry and construction in Vinh Phuc's GDP has significantly increased, from less than 40 percent in 2000 to 60.4 percent in 2013. Over the same period of time, the share in GDP of the primary sector fell almost three times, accounting for just over 10 percent of GDP in 2013. The agricultural sector provides around 50% of total employment, compared to 25 percent for manufacturing and 25 percent for the service sector.

9. Vinh Phuc is one of the key provinces for Foreign Direct Investment (FDI). The Province collects large revenue from import taxes. The operation of some large FDI enterprises such as Honda and Toyota in the province has made Vinh Phuc more active in import activities. The high tariff rates applied to spare parts and accessories of cars and motorbikes are the decisive factor behind the significant income from import taxes in Vinh Phuc which regularly accounts for about 8-10 percent of the provincial GDP. In 2011, the share of import taxes in provincial GDP reached 11.6 percent, even higher than the contribution of the state sector (9.2 percent). FDI plays a decisive role in Vinh Phuc's industrialization and GDP growth. As of December 2012, the total commitment of active FDI projects in Vinh Phuc was about US\$ 2.5 billion from some 150 active projects. Almost half of the provincial GDP comes from the FDI sector.

10. According to the current mechanism of revenue assignments, revenue of all trade taxes must be transferred to the central government. Vinh Phuc is one of the 12 provinces and cities which at present make net contribution to the central budget. The level of Vinh Phuc's public debt is insignificant. Over period 2006-11, the average borrowings of Vinh Phuc remained about just one percent of the local receipt. Vinh Phuc is therefore an important growth hub for the national economy as well as local development.

11. Despite the fast economic growth Vinh Phuc is facing a number of challenges such as frequent flooding, water demand competition among regions for agricultural, industrial and domestic uses during the dry season, regional water pollution, lack of infrastructure and weak institutional capacity

for sustainable development. These challenges have become bottlenecks for Vinh Phuc to sustain its further growth.

12. 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 (Basin B) where the provincial capital city of Vinh Yen and most of FDI zones are located. According Vinh Phuc's development master plan approved by the Prime Minister, 20 provincial level industrial zones, a large scale up from the four existing zones, will be established by 2030. In total 14 of these zones will be located in areas at high risk of flooding. Frequent floods have caused serious impacts on agriculture in rural areas, the city of Vinh Yen and the industrial zones and enterprises. Impacts have included significant loss of agricultural and industrial productivity - impacting on livelihoods - and deterioration of infrastructure in both rural and urban areas. Economic costs of flood damage are significant. Initial estimates of the flood damage during the period 2006-2013 are about US\$150 million, including significant agricultural production losses of around 30 percent of total crop values. Flooding also causes significant disruption to traffic in Vinh Yen City and several industrial zones. Health-related costs are considerable. In November 2008, severe floods led to the death of six people and injury of two, flooding of 2,073 houses, destruction of six houses and damage to about 100km of roads, 17,000 ha of agricultural land and 4,000 ha of fishery. The total cost of all damages and disruption was estimated as VND 300 billion (US\$15 million).

13. In addition to flooding during the rainy season (May to October), Vinh Phuc is also facing water shortage for agricultural activities during the dry season from November to April when water needs to be abstracted from the Red River and the Lo River to compensate irrigation systems in the catchment, especially for the areas of about 10,000 ha of agricultural lands. With impacts of climate changes and development of hydropower stations upstream of these rivers, it is becoming more and more costly to abstract water from the two main rivers.

14. 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. All industrial zones in the Phan River basin are equipped with industrial wastewater treatment plants and operation of those plants is closely monitored by local DONRE to ensure the quality of effluent water meeting Category A standard. However only 50 percent of domestic and commercial wastewater generated from Vinh Yen city will be collected and treated by the recently completed wastewater treatment plant financed by JICA. Wastewater generated from the towns, villages and small industrial clusters along the Phan River is discharged directly to the river without treatment. The majority of families living in rural villages along the Phan River have the access to piped water supply service and use flush toilets with septic tanks, a large volume of black water generated from those families is discharging to the environment through septic tanks, which together with grey water, ends in the Phan River. Surface water quality no longer meets the required Category A standard and, in the dry season, is well below Category B. Concentration of BOD and COD exceed limits regulated by the Government's national code for surface water (category B per QCVN 08-2008/BTNMT). Analysis conducted by DONRE shows that the domestic wastewater is the main pollution source with little contribution from industrial ones (e.g. heavy metals or chemicals). According to 2013 monitoring data, concentration of BOD varied from 29mg/l to 136mg/l, which is 1.16 to 5.44 times greater than the allowed limit. Similarly, concentration of COD varied from 98.7mg/l to 345mg/l; 2.82 to 9.86 times the allowed limit.. Water pollution has caused significant impacts on public health locally. According to Vinh Phuc Provincial Center for

Preventive Medicine, there were 5,747 cases of diarrhea from January to November 2014 in the districts of Phan River's Basin. In addition to health impacts, water pollution also affects Vinh Phuc's medium to long term plans to foster service and tourism sectors as part of Metropolitan Hanoi.

15. All these water related challenges need to be addressed by the provincial government, under the overall guidance of the central ministries. The PPC is decision making authority at the provincial level. The PPC is supported by the line departments and agencies within their assigned mandate and responsibility. District and city governments perform their roles and duties within their territory under the direction and guidance of the PPC and departments. However, there is a lack of coordination mechanisms among parties involved in water resource management and capacity and an effective and integrated management system. For example, water resource and water quality monitoring systems in the catchment are yet to be established, currently only the Department of Natural Resources and Environment (DONRE) has two automatic water quality monitoring stations. There is no, or very limited, flood warning and emergency response system. These elements are critical to provide timely and accurate information to the government for decision making and emergency response, especially in addressing flooding and pollution incidents.

Relationship to CAS

16. The project is closely aligned with the twin goals: ending extreme poverty and boosting shared prosperity. The project will directly benefit 810 thousand people, living in the sub-catchment area, by (i) reducing vulnerability to flooding and increasing agricultural productivities including the population in the bottom 40 percent; and (ii) generating job opportunities for the population in and outside of the province. The project will directly help reduce the incidence of flooding in the target area and its associated costs; reduction in agricultural production, physical damage to property and possessions, loss of income and commercial goods, and public health costs. Enterprises will benefit from an improvement in infrastructure and reduced business disruption due to flooding. This will improve the investment environment for FDI that will assure job creation and reduce the vulnerability for those currently employed. The project will also help to improve the environmental conditions in the small towns and villages through improved wastewater service. More than 160 thousand peoples will be directly benefited from better environmental conditions, majority of them are famers with low income, by reduction of incidences of water-born diseases and associated health care costs.

17. The proposed project is consistent with the World Bank Country Partnership Strategy (CPS) for 2012-2016 and contributes directly to the "Sustainability" and "Opportunity" pillars.

Furthermore, the proposed project would address the critical constraint for Vinh Phuc's long term development by increasing the ability of Vinh Phuc Province and its people, economic assets and commercial businesses to withstand the impacts of natural hazards and climate change. This intervention will support the following CPS outcomes:

Outcome 2.3: Enhanced preparedness for natural hazards and climate change. The project will strengthen capacities of province's flood and water management, including planning, flood and water pollution control, water resource and water monitoring, flooding information and emergency response systems.

Outcome 3.1: Increased opportunities for the poor and households resilience to shocks. The project will reduce floods, improve the environment and create more favorable conditions for abstracting investments. This will create opportunities for famers in cultivating additional crops, reduce the healthcare costs and create more jobs in industries and services.

Outcome 3.2: Improved basic infrastructure and public service delivery and access. This project will enhance flood management and water pollution control infrastructure in selected areas of Vinh Phuc Province. In particular, the coverage of improved wastewater services in the towns and villages will increase.

18. The project is aligned with the Vinh Phuc 2020 Provincial Socio-economic Development Plan (SEDP) that was approved by the Prime Minister of Vietnam by his Decision No. 113/QD-TTg dated January 20, 2012. It is also in line with the Vinh Phuc 2030 Urban Master Plan, with vision to 2050, that was approved by the Prime Minister of Vietnam by his Decision No. 1883/QD-TTg dated October 26, 2011. The SEDP laid out the vision for Vinh Phuc to become an industrial, service and tourism center of the region and the country by 2020 while the Urban Master Plan set the direction for the project areas to be developed as high-quality agricultural commodities base to serve Hanoi

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

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

20. The PDO will be achieved through (i) supporting structural measures for flooding control and river rehabilitation; (ii) improving wastewater collection and treatment in districts, small towns and rural villages; (iii) establishing water resource and water quality monitoring and flooding and emergency response systems; and (iv) institutional development and training for the government departments and water sector practitioners aiming at managing the river basin and water related sectors in an integrated manner.

Key Results (From PCN)

21. At the project level, PDO indicators for the proposed project include:

- Direct project beneficiaries (number), of which female (percentage) (Core Indicator); sub indicators:
 - Population provided with flood protection, in the catchment and Vinh Yen city
 - Number of people served by improved wastewater management systems
 - Increase in the satisfaction rate of beneficiaries in flood control and environmental management
- Volume (mass) of BOD pollution load removed by the treatment facilities supported under the project (tons/year) (Core indicator)
- Real time water resource and water quality monitoring system established and functioning
- Flooding emergency response system established and functioning

III. Preliminary Description

Concept Description

1. The provincial government is determined to address the flooding and water pollution challenges to its long term sustainable development, specifically to (i) improve the agricultural productivity in the entire catchment; (ii) safeguard rural communities, Vinh Yen City and economic development zones; and (iii) improve the investment environment for FDI. The central government and Development Partners (DP) are working with Vinh Phuc to address these water related challenges but mainly in the capital city of Vinh Yen. Flooding in the province and water pollution in the Phan River catchment remain to be critical gaps to address. Varied technical options including centralized vs decentralized flooding control were discussed. Given flood risk and environmental management

are closely interlinked; it was proposed that the project incorporates two integrated investment components supported by cross cutting support to institutional strengthening and implementation support. The project will include an optimal mix of structural and nonstructural measures – including monitoring and early warning systems.

2. The project is the first standalone intervention of the Bank in Vinh Phuc province to support Vinh Phuc in addressing flood and improving environmental conditions in the Phan River catchment through structural investments and institutional development. The estimated total project cost is US\$180 million with US\$ 150 million proposed to be financed by an IBRD loan. The estimated government counterpart funding is US\$30 million to cover the costs of land acquisition, compensation and project administration following the government's procedures. This is the first IBRD loan to be provided directly to a subnational province in Vietnam.

3. The project would coordinate with ongoing Government and DP funded works. Government funded support includes some limited flood risk control works and pilot water pollution control in the Phan River catchment. JICA is providing support to build wastewater treatment plant and sewers and ADB plans to support household connections and lake rehabilitation to address the water pollution. Both DPs are focusing only on the Vinh Yen City area.

Project components:

Component 1 - Flood Risk Management (estimated cost US\$ 110 million)

4. This component includes support for flood control of Basin B through structural measures in Basin B (including sub-basins B-1, B-2 and B-3) and Basin C. Flood control will be through construction/ rehabilitation of retention lakes to increase regulation capacity, construction of drainage pumping stations and canals to divert storm water from basin B to Pho Day or Red River, dredging of Phan River to augment flow capacity, and construction of flood control gates with associated embankments to prevent storm water entering Basin B from Basin C. The key activities include:

- Sub-basin B1: (i) construction of Kim Xa pumping station with capacity of 45m³/s with outlet sluice gate to Pho Day River; (ii) dredging Nhi Hoang and So retention lakes with area of about 100ha; and (iii) rehabilitation of Yen Lap flood control gate;
- Sub-basin B2: (i) construction of Ngu Kien pumping station with capacity of 45m³/s including outlet sluice gate and 2km of outlet canal to Red River; (ii) dredging Rung retention lake with area of about 150ha; (iii) dredging 3km of canal connecting Rung retention lake and Phan River; and (iv) dredging middle section of Phan River (Thuong Lap – Lac Y) with length of about 28km;
- Sub-basin B3: (i) construction of Nguyet Duc pumping station with capacity of 75m³/s including 7.5km of inlet canal connecting to Sau Vo lake, outlet sluice gate and 2km of outlet canal to Red River, (ii) dredging Sau Vo retention lake with area of about 180ha, and (iii) dredging lower section of Phan River (Lac Y – Cau Sat) with length of about 18km; and
- Basin C: (i) construction of 2 flood control gates (Cau Ton and Cau Sat) and related embankment works, and (ii) dredging 3 rivers with total length of about 66km.

Component 2 Water Environmental Management (estimated cost US\$ 23 million)

5. This component includes support to improve wastewater management and collection in districts small towns and number of rural villages along the Phan River. Given that the source of pollution mostly from domestic households, this component will focus on intercepting and treating wastewater using simple and low cost anaerobic Imhoff tanks or biological lagoons followed by wet

lands. It would include:

- Wastewater management for district small towns: construction of wastewater collection and treatment facilities in a number of towns, each facility is capable to provides service to about 20,000 people; and
- Wastewater management for rural communities: construction of about 100 small scale wastewater collection and treatment schemes in rural villages, each scheme can serve 1,000-1,500 peoples. There are criteria for selecting those villages, including such as locating along and at less than 3km from the Phan River, densely populated and with high rate of families using piped water supply and toilet with septic tanks, etc. .

Component 3 Implementation Support (estimated cost US\$ 10 million), Technical Assistance and Institutional Strengthening (estimated cost US\$ 7 million)

6. This component includes support to project implementation; measures to improve water resource and water quality monitoring and emergency flooding early warning; institutional development to support the integrated management of the river basin and water related sectors in an integrated manner; and other TA activities. It would include:

- Support project implementation: (i) consulting services for sub-project feasibility studies and detailed design; (ii) procurement support; (iii) construction supervision; (iv) safeguards monitoring; (v) audits, (vi) project implementation monitoring and evaluation; (vii) equipment/software for project implementation; and (viii) other consultants as necessary; and
- Technical assistance and capacity building: (i) providing water resources and water quality monitoring systems; (ii) providing flood early warning and emergency response system; and (iii) training and capacity building activities for government departments and water sector practitioners in water resource management, flood modelling, pollution control, asset operation, maintenance, management, etc.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04	x		
Forests OP/BP 4.36		x	
Pest Management OP 4.09	x		
Physical Cultural Resources OP/BP 4.11	x		
Indigenous Peoples OP/BP 4.10	x		
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37			x
Projects on International Waterways OP/BP 7.50	x		
Projects in Disputed Areas OP/BP 7.60		x	

V. Financing (in USD Million)

Total Project Cost:	180.00	Total Bank Financing:	150.00
Financing Gap:	0.00		
Financing Source			Amount

Borrower	30.00
International Bank for Reconstruction and Development	150.00
Total	180.00

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