ADB

Concept Paper

Project Number: 49404
July 2016

Proposed Loan
Viet Nam: Water Efficiency Improvement in Drought Affected Provinces

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 18 July 2016)

Currency unit	–	Viet Nam dong (VND)
VND1.00	=	$0.0000448
$1.00	=	VND22,302

ABBREVIATIONS

ADB	–	Asian Development Bank
ANR	–	agriculture, natural resources and rural development
ARP	–	Agricultural Restructuring Policy
CPS	–	country partnership strategy
DED	–	detailed engineering design
IMC	–	irrigation management company
MARD	–	Ministry of Agriculture and Rural Development
OCR	–	ordinary capital resources
O&M	–	operations and maintenance
PPTA	–	project preparatory technical assistance
WUG	–	water user group

MEASUREMENTS

ha	–	hectare
kg	–	kilogram
km	–	kilometer
m^3	–	cubic meter
mm	–	millimeter

NOTE

In this report, "$" refers to US dollars unless otherwise stated.

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PROJECT AT A GLANCE

1. Basic Data

Project Number: 49404-002

Project Name	Water Efficiency Improvement in Drought Affected Provinces	**Department /Division**	SERD/SEER
Country	Viet Nam, Socialist Republic of	**Executing Agency**	Ministry of Agriculture and Rural Development
Borrower	Socialist Republic of Viet Nam		

2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓ **Agriculture, natural resources and rural development**	Irrigation	120.00
	Total	**120.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Adaptation ($ million)	120.00
Environmentally sustainable growth (ESG)	Disaster risk management	Climate Change impact on the Project	High

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Governance and capacity development (GCD)	Institutional systems and political economy	Effective gender mainstreaming (EGM)	✓

5. Poverty Targeting		**Location Impact**	
Project directly targets poverty	Yes	Rural	High
Geographic targeting (TI-G)	Yes		

6. Risk Categorization: Low

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** B **Indigenous Peoples:** B

8. Financing

Modality and Sources	Amount ($ million)
ADB	**120.00**
Sovereign Project loan: Ordinary capital resources	20.00
Sovereign Project loan: Asian Development Fund	100.00
Cofinancing	**0.00**
None	0.00
Counterpart	**10.00**
Government	10.00
Total	**130.00**

9. Effective Development Cooperation

Use of country procurement systems	No
Use of country public financial management systems	No

I. THE PROJECT

A. Rationale

1. Low water productivity in Viet Nam's agriculture sector undermines national water security, threatens sustained economic growth and increases the country's vulnerability to climate change.[1] Viet Nam is amongst several Asian countries most likely to experience 'severe water-stress conditions' due to changes in hydro-climatic conditions and 'socioeconomically-driven water requirements'.[2] The proposed Water Efficiency Improvement in Drought Affected Provinces (the project) aims to improve agriculture water productivity (crop per drop) by increasing water use efficiency in irrigated agriculture in five drought affected provinces in the Central Highland and South Central Coastal Regions: Binh Thuan, Dak Lak, Dak Nong, Khanh Hoa, and Ninh Thuan.

2. **Development Problem.** Underperformance of irrigation systems underpins low water productivity in the agriculture sector. Contributing factors are: (i) poor planning and management of basin water resources; (ii) rapid deterioration of infrastructure due to poor construction and inadequate maintenance; (iii) operational inefficiencies due to weak enforcement of regulations and the lack of robust management; and (iv) limited uptake of on-farm water efficiency measures. Irrigation management companies (IMCs) operate and maintain head works and higher order (i.e. main, primary and secondary) canals of irrigation schemes.[3] A 2008 waiver of irrigation service fees paid by water user groups (WUGs) to IMCs has undermined the service orientation of IMCs. Since then, the government subsidizes operation and maintenance (O&M) of systems. However, funds are often inadequate for the purpose.

3. Climate variability has heightened the urgency to address agricultural water productivity in the targeted provinces. The recent El Niño effect caused severe drought conditions requiring the provinces to declare a state of emergency.[4] Rainfall in the 2015 wet season was 32% less than in an average year; in some months the probability of rainfall being any lower was only 6%.[5] An estimated 60,000 ha of agricultural land in the Central Highlands was subject to varying degrees of crop failure in 2015; a significant impact considering that the region accounts for 98% of the coffee and 20%-30% of the rubber, pepper, cashews and tea growing areas. The likely long term climate scenario for the region is warmer conditions (annual mean air temperature increases of $0.8^{o}C$ – $0.9^{o}C$) with little change in rainfall. [6]

4. **Government's Response.** The government's Agricultural Restructuring Plan (ARP)[7] of 2013 highlights the need to improve water productivity in order to raise efficiency and

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[1] Water productivity refers to the quantity of crop produced per unit of water used. Average water productivity for crops and rice production in Viet Nam is reported to be around 0.6-0.8 kg/m^3, much lower than the levels of 2.0-2.5 kg/m^3 achieved by other similar rice producing countries.

[2] Charles Fant, et. al. 2016. *Projections of Water Stress Based on an Ensemble of Socioeconomic Growth and Climate Change Scenarios: A Case Study of Asia*. PLoS ONE 11(3), Washington. D.C.

[3] World Bank. 2013. Irrigated Agriculture and Irrigation System Management Reform. Washington. D.C.

[4] In June 2016, ADB approved an emergency grant of $3 million from the Asia Pacific Disaster Response Fund to provide humanitarian assistance to people affected from the drought and salinity intrusion. (G0480-VIE: El Niño Disaster Response),

[5] UNESCO-IHE. 2016. Drought Analysis, South Viet Nam.

[6] Based on high resolution climate projections for Viet Nam conducted by the Institute of Meteorology, Hydrology and Environment (IMHEN). See: http://climatetool.vnclimate.vn/cf/future-climate/

[7] Prime Minister's Decision No. 899/QĐ-TTg of 10 June 2013 on "Agricultural Restructuring towards Raising Added Values and Sustainable Development."

competitiveness of the sector and place it on an environmentally sustainable footing. A complementary decision (Decision No. 1788/QD-BNN-TCTL of 2015) by the Ministry of Agriculture and Rural Development (MARD) aims to develop advanced water-saving irrigation practices on 500,000 ha of upland crops by 2020.[8] Other complementary policies include the new rural development policy and promotion of high-tech agricultural zones to promote high value crops.

5. **ADB's Strategy.** ADB's Country Partnership Strategy (CPS, 2012–2015)[9] supports Viet Nam's transition to an upper-middle-income country through three pillars: inclusive growth, environmental sustainability, and improved efficiency. The project is aligned with ADB's strategy for the agriculture, natural resources and rural development (ANR) sector which focuses on modernizing productive rural infrastructure, improving water resources management and watershed protection, and supporting agriculture commercialization. The project is consistent with ADB's Operational Plan for ANR (2015–2020), Water Operational Plan 2011–2020, Operational Plan for Integrated Disaster Risk Management 2014–2020, and ADB Strategy 2020 Midterm Review. The project is included in the Country Operations Business Plan (2016–2018) and supports the adoption of a programmatic approach over the next CPS period (2016–2020). The project also benefits from synergies with other ADB initiatives such as the Mekong Business Initiatives.

6. Lessons from previous projects and sector-level systemic issues have been adopted in the design of the project. To reduce project processing time the government, in consultation with ADB, committed its own resources to the process of prioritizing and preparing feasibility studies of subprojects that would be included in the project. These actions taken in advance of the project preparatory technical assistance (PPTA) show government's strong commitment to the project.[10] ADB also aims to improve project readiness by undertaking detailed engineering designs (DED) of one or two eligible subprojects during project preparation.[11] To improve governance and reduce administrative burdens during implementation, the project will consist of a small number of subprojects each with relatively large procurement packages.

B. Impact, Outcome and Outputs

7. The impact of the project is productivity and competitiveness, climate resilience and disaster preparedness in the agriculture sector enhanced in line with the government's ARP.[12] The outcome is water productivity of irrigated agriculture in five drought affected provinces of the Central Highland and South Central Coastal Regions improved. The outputs are: (i) delivery of irrigation management services improved; (ii) modernized and climate resilient irrigation systems developed; and (iii) improved on-farm water management practices adopted.[13]

8. Under Output 1, the project will support participating IMCs and WUGs to adopt modernized irrigation management practices and more sustainable O&M measures, which will

[8] Minister of Agriculture and Rural Development decision No. 1788/QD-BNN-TCTL dated 19th May 2015 on promulgating the Action Plan for the development of advanced and water saving irrigation for upland crops to Assist Water Resources Sector Restructuring.
[9] The CPS (2012-2015) has been extended until 2016 while a new CPS (2016-2020) is being prepared.
[10] ADB provided two staff consultants to supervise this process to ensure alignment with criteria agreed beforehand between ADB and the government.
[11] The project is targeted to receive additional financing to undertake DED of climate change responsive subprojects from the Project Readiness Improvement Trust Fund. These subprojects will also establish the basis for leveraging supplementary climate financing for the project.
[12] The project is rated as 'high' in terms of climate change impact, based on an initial climate screening and AWARE.
[13] The Design and Monitoring Framework is in Appendix 1, and the Problem Tree in Appendix 2.

improve the sustainability and returns on public investments and strengthen climate change response measures. Output 2 will support modernization of eight irrigation systems serving a command area of around 33,500 ha planted primarily in high value crops. Modernizing will entail measures such as improved conveyance, flow regulating, and monitoring systems. Output 3 will support demonstrations of innovative on-farm water-saving irrigation solutions.[14] The project will also attract private investors to invest in large scale agriculture production and processing in designated 'high-tech agriculture zones'. Such investments will increase the revenue generating potential of the project investment.

C. Investment and Financing Plans

9. The indicative investment cost is estimated at $130 million. ADB will provide $120 million from its ordinary capital resources (OCR) where $100 million will be on concessional OCR lending and $20 million on regular OCR lending. The government will contribute $10 million equivalent.

Table 1: Tentative Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank		
Concessional OCR Lending	100.0	76.9
Regular OCR lending	20.0	15.4
Government	10.0	7.7
Total	**130.0**	**100.0**

Source: Asian Development Bank estimates.

D. Indicative Implementation Arrangements

10. MARD will be the executing agency and will delegate project implementation responsibility to a project management unit within its central project office. The Provincial Peoples' Committees of target provinces will identify and design subprojects in their respective jurisdictions. All goods and civil works will be procured in accordance with the ADB Procurement Guidelines (2015, as amended from time to time) and all consultants will be recruited following the ADB Guidelines on the Use of Consultants (2013, as amended from time to time). The project envisages using advance contracting subject to ADB management approval and project readiness.

II. DUE DILIGENCE REQUIRED

11. The PPTA will determine the project viability by conducting the following assessments:

(i) **Technical.** Technical feasibility based on sound system diagnostics and assessment.
(ii) **Economic.** Economic viability of subprojects and the overall project.
(iii) **Financial**. Public expenditure and financial management and sustainability analysis including borrowing and debt servicing capacity.
(iv) **Governance.** Procurement, anticorruption, policy, legal and institutional issues.
(v) **Poverty and Social.** Poverty analysis, social impacts and gender assessments.[15]

[14] Technical support from ADB's Water Financing Partnership Facility on water productivity assessments and energy audits has enhanced the design of such demonstration models. Technology options may include drip and sprinkler irrigation systems and remote-sensing based decision support tools.
[15] An Initial Poverty and Social Analysis is in Appendix 4.

(vi) **Safeguards.** Environment including climate resilience and vulnerability, involuntary resettlement, and indigenous peoples.

III. PROCESSING PLAN

A. Risk Categorization

12. A "low risk" categorization is proposed based on: (i) loan amount not exceeding $200 million; (ii) ADB's strong previous experience in the sector in Viet Nam; (iii) MARD's substantial experience with official development assistance project preparation and administration; and (iv) proposed safeguards categorization of B for environment, involuntary resettlement, and indigenous peoples.

B. Resource Requirements

13. Under the PPTA (Appendix 3), a consulting firm will provide 21 person-months of international and 42 person-months of national specialists. An additional 3 person-months of international and 4 person-months of national inputs of participatory irrigation management specialists will be recruited through individual consultant selection. The government was advised that approval of the PPTA does not commit ADB to finance any ensuing project. Additional financing to undertake DED will be incorporated once the Project Readiness Improvement (PRI) Trust Fund is operational.[16]

C. Processing Schedule

14. The PPTA will be implemented from 15 August 2016 to 30 September 2017. The TA and loan processing schedule up to Board approval is shown in Table 2.

Table 2: Proposed Processing Schedule

Milestones	Expected Completion Date
Concept Paper Approval	August 2016
Staff Review Meeting	June 2017
Board Approval	February 2018

Source: Asian Development Bank estimates.

IV. KEY ISSUES

15. This will be one of the first few projects that are subjected to Decree 16 on management and utilization of overseas development assistance and concessional loans and the new State Budget Law which stipulate terms and conditions of onlending to the provinces. The PPTA will assist provinces assess their borrowing capacity (i.e. headroom) and debt repayment capacity. This will also be one of the first ANR sector projects in Viet Nam to include a blend of concessional OCR lending and regular OCR lending.

[16] Based on an estimate of DED costing 7%-8% of the capital cost, the additional financing will be around $800,000–$1,000,000.

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is aligned with:
Productivity and competitiveness, climate resilience and disaster preparedness in the agriculture sector enhanced (Government's Agriculture Restructuring Plan, Prime Minister's Decision No. 899/QĐ-TTg of 10 June 2013).

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Water productivity of irrigated agriculture in five drought affected provinces of the Central Highland and South Central Coastal Regions improved	By 2022: Crop production per unit of water consumed increased by 30% (kg/m^3) (2018 baseline: xx kg/m^3)	a. Independent monitoring studies b. Annual project monitoring report (PMR) surveys of production from rehabilitated irrigation systems	Climate change impacts exceeds projections
Outputs 1. Delivery of irrigation management services improved	By 2022: 1a. Water delivery services to households in subproject irrigation systems improved by 30% with 30% of new beneficiaries being female headed households. (2018 baseline: xx) 1b. Routine maintenance schedules (based on asset conditions inventories) prepared and implemented by IMCs in all subprojects irrigation schemes by xx. (2018 baseline: xx) 1c. At least 3 IMCs engage in public-private partnership arrangements (2018 baseline: 0)	1a. Knowledge, attitude and practice survey of WUGs on services provided by IMCs 1b–c. PMR and IMC annual reports	Diminished government supports for policy reforms on irrigation service management
2. Modernized and climate resilient irrigation systems developed	By 2022: 2a. xx km of irrigation canals modernized and climate proofed (2018 baseline: xx km) 2b. xx flow and hydro-met measurement devices installed and operational (2018 baseline: xx)	2a–c. PMR and project monitoring reports	Governance issues adversely impact upon quality of rehabilitation with consequent impact on operational efficiency and

Project Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	2c. Command areas receiving designed water supplies increased by xx ha (2018 baseline: xx ha)		sustainability of infrastructure
3. Improved on-farm water management practices adopted	By 2022: 3a. Farmers adopt high efficiency irrigation systems on xx ha (with 30% of area operated by women beneficiaries) (2018 baseline: xx ha) 3b. Energy use for on-farm irrigation in subproject catchments areas reduced (2018 baseline: xx kWh) 3c. Farmers in subproject areas with access to extension services increased (with 30% of beneficiaries being women) (2018 baseline: xx%)	3a. PMR and other provincial annual reports 3b. PMR based on annual surveys of water user groups by targeted crops 3c. PMR and other monitoring reports	Price volatility of commodities exceeds projections

Key Activities with Milestones

1. Delivery of irrigation management services improved.

1.1 Assist participating IMCs to improve planning, regulation and monitoring of water delivery services in selected irrigation systems by December 2024.

1.2 Strengthen awareness and build capacity of IMCs to support high efficiency irrigation management practices based on periodic water productivity assessments by December 2024.

1.3 Strengthen existing irrigation asset management practices to improve efficiency and sustainability through rationalized O&M planning and budgeting by December 2022.

1.4 Improve participating IMCs business planning practices to promote stronger service-orientation and financially viability conducive to engaging in public-private partnerships by December 2022.

1.5 Strengthen participating WUGs to engage with IMCs in water allocation planning and monitoring and managing on-farm high efficiency irrigation systems by December 2022.

1.6 Strengthen participating IMCs and WUGs capacity to implement disaster risk management strategies and response measures by December 2022.

2. Modernized and climate resilient irrigation systems developed.

2.1 Review subproject designs and propose measures to modernize systems in view of: shift to high value less water intensive crop types and cropping patterns; potential for aggregation of farms to enable mechanization; growing water scarcity; and increased frequency of extreme climate conditions (floods and droughts) and likely increases in seasonal evapo-transpiration and irrigation requirements by December 2016.

2.2 Improve subproject designs by incorporating flow and hydro-meteorological measurement devises in command and catchment areas by December 2016.

2.3 Prepare detailed engineering designs of all subprojects by December 2018.

2.4 Prepare and implement a strategy to engage stakeholders (i.e. water user groups) in the design the construction of works, as well as in monitoring during construction and subsequent maintenance of works by December 2016.

3. Improved on-farm water management practices adopted.

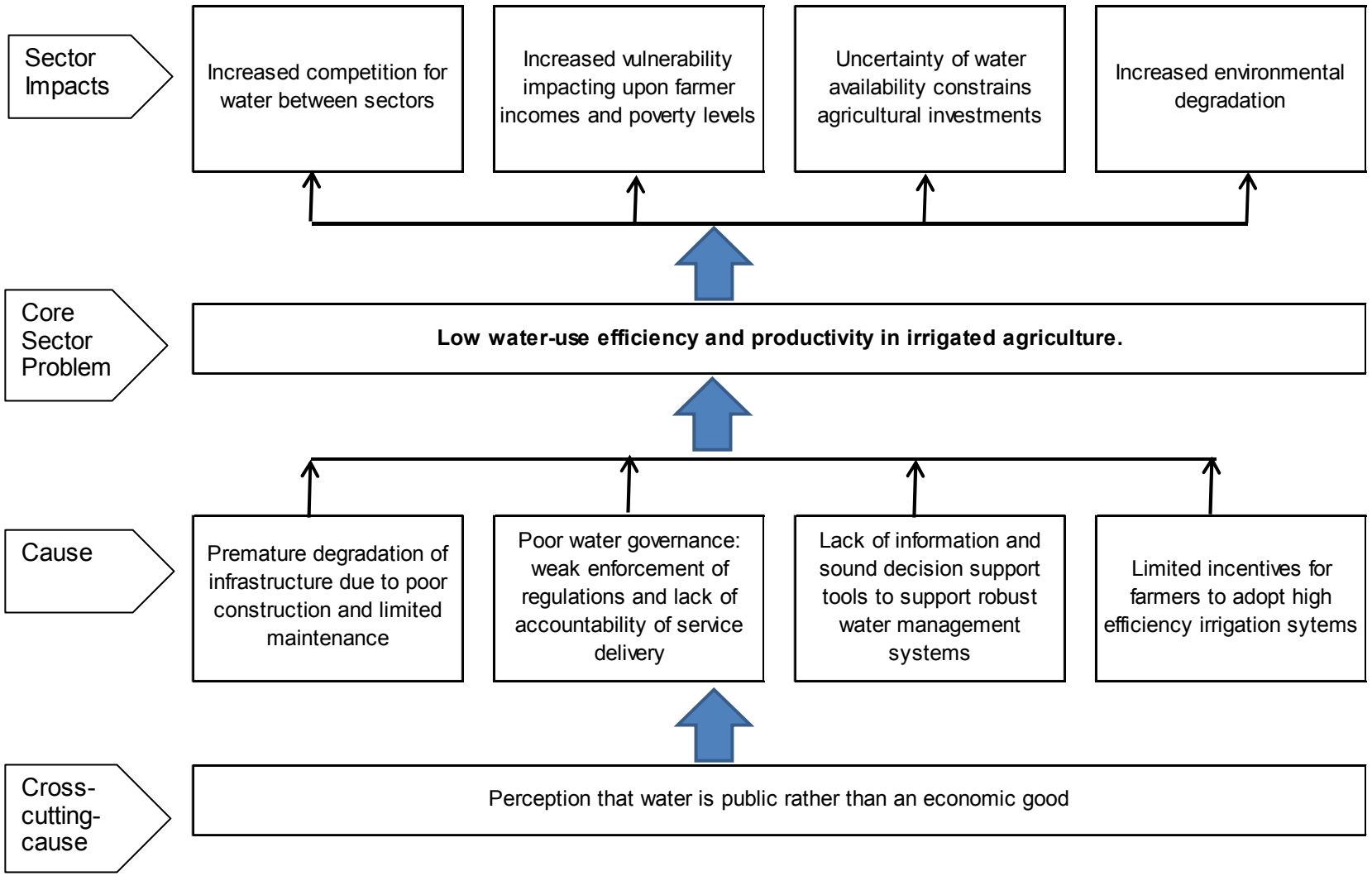
3.1 Design and implement high efficiency on-farm irrigation management demonstration activities by December 2022.

3.2 Facilitate engagement between water user groups and value chain operators to enable access to

extension services for uptake of high efficiency on-farm irrigation systems by December 2022. 3.3 Establish baseline and undertake periodic assessments to demonstrate resource use efficiency (energy and water) of on-farm irrigation systems by June 2018. 3.4 Develop and implement farmer training programs in improved land and water management practices based on high efficiency irrigation management until December 2022.
Project Management Activities a. Establish project management units, appoint incremental staff, and second government employees to the units (national and provincial) by the end of 2016. b. Prepare bidding documents of eligible subprojects and support the project management units in awarding contracts, providing quality assurance during construction, disbursements of funds and hand over of completed works by December 2017. c. Engage independent monitoring consultants to supervise compliance with due diligence during construction of works by December 2017. d. Train new staff in procurement, financial management, and implementation coordination. e. Recruit implementation support consultants by December 2017. f. Establish project performance and financial management systems for project with gender disaggregation by June 2018. g. Complete monthly, quarterly, and annual progress and financial reporting to the government and ADB (ongoing). h. Undertake midterm review by December 2021 and project completion reviews by December 2024.
Inputs Asian Development Bank Concessional OCR: $100.0 million Regular OCR: $20.0 million Government: $10.0 million Provincial and district administrations: To be determined
Assumptions for Partner Financing Not Applicable

ADB = Asian Development Bank; IMCs = irrigation management companies; ha = hectare; km = kilometer; kWh = kilowatt hour; OCR = ordinary capital resources; O&M = operation and maintenance; PMR = project monitoring report; WUG = water user groups.
Source: Asian Development Bank.

PROBLEM TREE



PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. Project preparatory technical assistance (PPTA) is required to prepare the investment project. The overall project involves modernizing eight irrigation schemes (i.e. subprojects) commanding about 33,500 ha in Binh Thuan, Dak Lak, Dak Nong, Khanh Hoa and Ninh Thuan provinces. The irrigation schemes are mainly open canal gravity schemes. There are some pumped schemes in Dak Nong and Dak Lak provinces. The government has commenced preparation of feasibility studies of the subprojects in advance of the PPTA. The PPTA consultants will review and revise the subprojects (as needed) and undertake the due diligence (i.e. technical, economic, financial, environmental and social) to meet ADBs requirements.

B. Major Outputs and Activities

2. The PPTA team will work closely with the government teams assigned to prepare the feasibility studies of individual subprojects and the overall project. They will also work closely with the climate risk and vulnerability assessment (CRVA) team[1] to incorporate climate change responsive measures in designing the project. Adopting a fully consultative process, they will design outputs that meet the stated impact and outcome of the project. They will prepare the project documents required to support processing and approval of the project by ADB. They will also provide start-up support to the government to mobilize implementation consultants and for advance implementation actions.[2] Table A3.1 summarizes major outputs and activities.

Table A3.1: Summary of Major Deliverables

Major Deliverables	Due Date
Inception report	Nov 2016
Reports on agricultural sector assessment; environmental, social, poverty and gender impact assessments; and river basin water resources assessments considering present and future demands and likely climate change impacts	Dec 2016
Reports on economic and financial analyses; financial management and fiduciary capacity; gender action plans; summary poverty reduction and social strategy; initial environmental examinations; resettlement plan; resettlement framework; ethnic minority plan; and climate risk and vulnerability assessments, project procurement risk assessments and risk management plan	Jan 2017
Representative subproject feasibility studies complying with ADB requirements; summary of the project's contribution to the ADB results framework; summary of how the project promotes development coordination; draft procurement plan and project administration manual; and master bidding documents for each type of contract	Feb 2017
Draft final report in the format of an ADB RRP	Mar 2017

ADB = Asian Development Bank, RRP = Report and Recommendation of the President.

C. Cost Estimate and Proposed Financing Arrangement

3. The PPTA is estimated to cost the equivalent of $1,300,000 of which $800,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-V) and $250,000 from the Netherlands Trust Fund under the Water Financing Partnership Facility (WFPF) and administered by ADB. The government is financing 8 feasibility studies and will provide counterpart staff, office staff, basic office equipment and associated costs, data and office space for PPTA consultants, and domestic transport for counterpart staff. The PPTA cost estimates are shown in Table A3.2.

[1] The CRVA will be carried out by a separate team of consultants who will mobilized coterminous with the PPTA.

[2] The PPTA consultants may be required to undertake the detailed engineering designs (DED) of 1-2 subprojects. This will be done through a variation of the contract, once the proposed financing for undertaking DED from the Project Readiness Improvement Trust Fund is secured.

Table A3.2: Cost Estimates and Financing Plan ($'000)

Item		ADB[a]	WFPF[b]	TOTAL
1	**Consultants**			
	Remuneration			
	a. International Consultants	380.00	100.00	480.00
	b. National Consultants	102.00	36.00	138.00
	Per Diem			
	a. International Consultants	57.00	15.00	72.00
	b. National Consultants	25.50	9.00	34.50
	Air Travel			
	a. International Travel	45.00	25.00	70.00
	b. Domestic Air Travel	10.80	5.00	15.80
2	**Equipment[c]**	16.80	0.00	16.80
3	**Workshops and conferences[d]**	20.50	30.00	50.50
4	**Surveys**	17.40	30.00	47.40
5	**Miscellaneous administration and support costs[e]**	15.00	0.00	15.00
6	**Representatives for contract negotiations[f]**	5.00	0.00	5.00
7	**Contingencies**	105.00	0.00	105.00
	TOTAL	**800.00**	**250.00**	**1,050.00**

ADB = Asian Development Bank, WFPF = Water Financing Partnership Facility.
Note: The government will provide in-kind contributions with an estimated value of 20% of the total PPTA cost.
[a] Financed by the Technical Assistance Special Fund (TASF-V) of the Asian Development Bank.
[b] Administered by the Asian Development Bank.
[c] Equipment for office work will be procured in accordance with ADB's Procurement Guidelines (April 2015, as amended from time to time). The equipment purchased will comply with the guidelines on accountability of TA purchased assets and will include photocopier, computers, printers and communication equipment. Upon PPTA completion, the equipment will be turned over to the EA.
[d] Workshops and conferences include tripartite progress review meetings and policy/institutional capacity building workshops. Includes participants' travel and related logistical costs, fees and related costs for external resource persons. Fees for resource persons and facilitators, who are government officials will be covered by the government.
[e] Consultant's office administration.
[f] The user division, in consultation with OSFMD, will decide on the mode of negotiation. ADB. 2010. Specific Requirements for Recruiting Consultants by ADB. Project Administration Instructions. PAI 2.04. Manila.
Source: Asian Development Bank estimates.

D. Consulting Services

4. The PPTA will require a consulting firm to provide 21 person-months (p-m) of international and 42 p-m of national consultants. An additional 3 p-m of international and 4 p-m of national inputs of participatory irrigation management specialists will be recruited separately by ADB through individual consultant selection. The firm will be recruited using quality- and cost-based selection procedures with a quality-cost ratio of 90:10 and simplified technical proposal according to ADB's Guidelines on the Use of Consultants (2013 as amended from time to time). Consultants should have tertiary level qualifications from a recognized institution and a minimum of 10 years' relevant experience in developing countries of Southeast Asia. Table A3.3 shows anticipated consultant requirements.

Table A3.3: Summary of Consulting Services Requirement

International Specialist Position	p-m	National Specialist Position	p-m
Irrigation Institutional Specialist/Team Leader	6	Irrigation Institutional (O&M) Specialist/Deputy Team Leader	6
Irrigation Engineer	5	Irrigation Engineer	6
Hydrologist	2	Water Resources Specialist	4
Environment Specialist	1	Environment Specialist	4
Social and Gender Specialist	1	Social and Gender Specialist	4
		Resettlement Specialist	4
Agronomist	1	Agronomist	3
Procurement and Start-up Specialist	2	Procurement and Start-up Specialist	3
Project Economist	2	Project Economist	4

International Specialist Position	p-m	National Specialist Position	p-m
Finance Specialist	1	Finance Specialist	4
Participatory Irrigation Management Specialist[a]	3	Participatory Irrigation Management Specialist[a]	4
Total	**24**	**Total**	**46**

[a] Will be recruited through individual consultant selection.
Source: Asian Development Bank estimates.

5. **Irrigation Institutional Specialist/Team Leader** (International, 6 p-m) and **Irrigation Institutional (O&M) Specialists/Deputy Team Leader** (National, 6 p-m). The Team Leader will assume overall responsibility for performance of the PPTA team and take a lead role in liaising with government and ADB representatives. The specialists will jointly (i) lead the discussion with relevant provincial and central government agencies on modernization of irrigation systems under the Project; (ii) undertake related capacity assessments and recommend capacity building activities; (ii) propose appropriate operation and maintenance (O&M) regimes; (iii) propose appropriate public-private partnership arrangements; (iv) propose incentives and other arrangements to engage WUG in managing tertiary systems; (vi) identify appropriate mechanism to promote on-farm water saving irrigation practices; and (v) compile all documentation required for ADB's processing and approval.

6. **Irrigation Engineers** (International, 5 p-m and National, 6 p-m) will review the feasibility studies of the 8 subprojects prepared by the government and revise them as necessary to ensure modernizing of the systems. In particular they will review the: (i) hydrologic capacity of the schemes to ensure that all water needs including minimum environmental flows are met; (ii) hydraulic calculations of the conveyance systems; (iii) means of flow regulation/measurement; (iv) adequacy of scheme modernization (particularly adoption of measures to reduce water losses and increase climate change resilience), inclusion of cross drainage measures, protection against geotechnical hazards and water-related disasters; (v) cost-effectiveness of pumping schemes; and (vi) proposed O&M measures and related costs. The specialists will undertake diagnostic tools (RAP and MASSCOTE if possible) and will propose capacity building for irrigation management companies (IMCs).

7. **Hydrologist** (International, 2 p-m) and **Water Resources Specialist** (National, 4 p-m) will work with the hydrologists of the CRVA team to review (and adjust as necessary) the provinces' water availability and water balance calculations, taking account of present and future demands and projected changes in hydro-meteorological variables determined from climate risk and vulnerability assessments.

8. **Environment Specialists** (International, 1 p-m; National, 4 p-m) will carry out due diligence of the subprojects and overall project in accordance with ADB's Environmental Operational Directions (2013). They will (i) review subproject categorization and make recommendations for improved design/implementation and mitigation measures; (ii) assist the Hydrologist/Water Resources Specialist establish appropriate environmental base flows; and (iii) prepare initial environmental examinations of each subproject and the overall project.

9. **Social and Gender Specialists** (International, 1 p-m; National, 4 p-m) will (i) carry out due diligence of the poverty and social impact assessments, and (ii) prepare Poverty and Social Impact Assessment, Summary Poverty Reduction and Social Strategy, Gender Action Plan, Indigenous Peoples Action Plan, stakeholder communication strategy and consultation and participation plan in accordance with ADB's SPS (2009).

10. **Resettlement Specialist** (National, 4 p-m) will review the land acquisition and resettlement needs and corresponding plans to ensure their consistency with ADB's SPS 2009 and Environmental Operational Directions 2013. Where subprojects to be financed by ADB form part of a larger project development, the specialist will confirm that overall project resettlement activities are consistent with ADB requirements. The specialist will also prepare a social

compliance audit of existing project components to identify any pending involuntary resettlement issues associated with them.

11. **Agronomists** (International, 1 p-m; National, 3 p-m) will work with the agronomists of the CRVA team and recommend measures that can be supported by the project to promote on-farm high efficiency irrigation practices, especially taking climate variability into consideration. The specialist will also assess the potential for revenue generating models for O&M of irrigation systems.

12. **Procurement and Start-up Specialists** (International, 2 p-m and national, 3 p-m) will prepare (i) project procurement risk assessment report, including a procurement capacity assessment; (ii) master bidding documents for all contracts; (iii) relevant parts of the project administration manual including procurement plan; and (iv) implementation arrangements including staffing of project management units. They will assist provincial agencies to establish imprest accounts.

13. **Project Economists** (International, 2 p-m; and National, 4 p-m) will work with the economists of the CRVA team to: prepare the economic and financial assessment of subprojects and overall project in accordance with ADB Guidelines on Economic Analysis of Projects including the economic analysis of climate change responsive measures. They will assist with preparing sustainable O&M budgets.

14. **Finance Specialists** (International, 1 p-m; National, 4 p-m) will, in accordance with ADB's Financial Due Diligence - A Methodology Note, review the EA/IAs' financial management and fiduciary capacity and familiarity with ADBs financial management due diligence requirements. They will provide estimate incremental recurrent costs and other inputs to the economic and financial analysis. They will assess public debts status and borrowing capacity of the Ministry of Agriculture and Rural Development (MARD) and five provinces in consultation with ADBs public finance management TA consultants.

15. **Participatory Irrigation Management Specialists – Individual Consultants** (International, 3 p-m; National, 4 p-m) will provide technical, institutional and capacity building recommendations aimed at ensuring strong community engagement and water user participation in scheme design and improvement of O&M. The specialists will develop water productivity monitoring tools and indicators to inform beneficiaries, government and ADB of potential performance improvements and support the development of a benefit monitoring and evaluation framework. The specialists will also recommend ways to transfer ownership of irrigation assets to WUGs.

E. Implementation Arrangements

16. The EA for the PPTA will be MARD's CPO with the support of provincial people's committees. The PPTA will be implemented during August 2016 – September 2017. Advanced procurement will be used to select consultants. Proceeds of the PPTA will be disbursed in accordance with Technical Assistance Disbursement Handbook (2010, as amended from time to time). Table A3.4 presents the proposed processing and implementation schedule.

Table A3.4: Proposed PPTA Processing and Implementation Schedule

Major Milestone	Expected Completion Date
Government approval of project detailed outline	May 2016
Concept clearance / PPTA approval	15 August 2016
Mobilization of PPTA consultants	October 2016
Inception mission	November 2016
Midterm review mission	January 2017
Submission by PPTA of draft RRP and linked documents	April 2017
TA closing date	30 September 2017

Source: Asian Development Bank estimates.

INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	Viet Nam	Project Title:	Water Efficiency Improvement in Drought Affected Provinces
Lending/Financing Modality:	Project Loan	Department / Division:	Southeast Asia Department/ Environment, Natural Resources and Agriculture Division

I. POVERTY IMPACT AND SOCIAL DIMENSIONS

A. Links to National Poverty Reduction Strategy and Country Partnership Strategy

The project is consistent with the objectives of the government's current Socioeconomic Development Planning for 2011-2015 and is closely aligned to the National Targeted Program for New Rural Development with its focus on improving socio-economic conditions and creating diversified and higher valued production of agricultural goods. The project is consistent with Asian Development Bank's Country Partnership Strategy (CPS, 2012-2015)[a] which supports Viet Nam's transition to an upper-middle-income country through three pillars: inclusive growth, environmental sustainability, and improved efficiency.

B. Poverty Targeting

☐General Intervention ☐Individual or Household (TI-H) ☒Geographic (TI-G) ☐Non-Income MDGs (TI-M1, M2, etc.)

The project will improve the living conditions of residents in five drought-affected provinces (namely, Dak Lak, Dak Nong, Khanh Hoa, Binh Thuan and Ninh Thuan) by improving water resource planning and by improving water-use efficiency in agriculture. The targeted beneficiaries of the project include rural farmers dependent on agriculture for their livelihoods.

C. Poverty and Social Analysis

1. **Key issues and potential beneficiaries.** Viet Nam's poverty rate (as measured by international standards) has decreased from 58% in 1993 to 21% in 2010 (GSO,2011). By 2014, the national poverty rate was estimated at 5.97%. However the poverty rate in three of the five project provinces (Ninh Thuan: 7.53%; Dac Lak: 10.02%; and Dac Nong: 13.75%) is higher than the national poverty rate which was estimated at 5.97% in 2014.[b]

In term of both income and non-income poverty, the Central Highlands and South Central Coastal regions present significant challenges especially for ethnic minority groups. Ethnic minorities make up 5% and 11% of the total population of the respective regions; however they account for 74% and 34% of the poor in the respective regions.[c]

The targeted provinces are frequently affected by droughts, the last being the 2014-2016 El Niño droughts which had a significant impact on rural incomes. Key issues faced by rural inhabitants include (i) an unreliable source of water for irrigating high value crops; (ii) deteriorating irrigation infrastructure (head-works and distribution canals) that contribute to one of the lowest water-use efficiencies in Asia; (iii) increased uncertainty of precipitation due to climate change; and (iv) unsustainable extraction rates of ground water to irrigate upland crops impose additional costs as wells/bores need to be deeper – all of which are expressed in increased vulnerability of incomes and a risk of increased environmental degradation.

The introduction of on-farm water saving delivery mechanisms will invariably temporarily increase farmer debt as their financial resource bases are limited and most will need to access credit to adopt the technologies. This is only possible through the formal financial institutions where land titles have been issued to land users, a large proportion being ethnic minorities. As such. the project will re-enforce land ownership arrangements amongst the more vulnerable minority population.

2. **Impact channels and expected systemic changes**. The desired impact will be on water use efficiency in agricultural holdings. The project will improve water-use efficiency for irrigated agriculture as applied to higher valued crops. It will also attend to institutional capacity building to equip staff of irrigation water management companies and farmer water user groups to operate and maintain irrigation facilities. The project will also introduce water saving technologies to transfer water from these facilities to farmers' fields.

The adoption of a basin wide approach to planning water-use allocations is a significant change from the traditional planning by departments of agriculture and rural development at provincial levels. This, together with improved delivery mechanisms and with incentives for the adoption of water efficient irrigation techniques on high valued crops will improve water use efficiency leaving increased volumes for downstream users. The re-introduction of the principles of 'user pays' for water will provide added incentive to ensure the resource is used efficiently. The impacts from these development initiatives will be for increased incomes amongst the rural inhabitants (including a higher than average proportion of the poor and ethnic minority populations) who depend on agriculture for their livelihoods.

3. **Focus of (and resources allocated in) the PPTA or due diligence.** The PPTA will provide technical verification on the impact of the project on the poor, and in particular on ethnic minorities involved in agricultural. Two social and gender specialists (international and national) will be responsible for the preparation of a Gender Action Plan, a Communication and Participation Strategy and an Indigenous People's Plan to guide project implementation.

II. GENDER AND DEVELOPMENT

1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project or program?

Key gender issues relevant to this project include (i) women work equal amounts of time in agriculture, operate half the household businesses, yet few of them share equal control over household finances and are generally not included in village based decision making groups e.g. for irrigated agriculture (water user groups) or make key decisions on their households farming work; (ii) women have lesser opportunities to gain exposure to new and improved agricultural technologies than men due to their time consuming household burden and occasionally lower level of education; (iii) women are primarily responsible for care of children and the elderly, shopping and cooking and most other household duties and are often more impacted from drought situations as increased time is spent collecting and processing water for household consumption; (iv) for ethnic women these constraints are compounded by inability to confidently converse in Vietnamese language due to their non-participation in formal educational services – partly because of their isolation but also cultural practices preclude their participation; and (v) within irrigation management companies, very few women are engaged in either technical or administrative positions and similarly for district and commune committees they lack representation in decisions about prioritizing subprojects contributing to perpetuation of the mind-set of male only orientated planning and extension services. Familiarity with the gender mainstreaming concepts is minimal. Women's exclusion from the public sphere appears to be due to a combination of cultural practices.

2. Does the proposed project or program have the potential to make a contribution to the promotion of gender equity and/or empowerment of women by providing women's access to and use of opportunities, services, resources, assets, and participation in decision making?

Yes. Opportunities exist to increase representation of women in water user group committees to assist in the operations and management of irrigation schemes in leading an water efficiency demonstration model and in capacity building opportunities from project. A gender action plan will be prepared during PPTA based on gender assessment.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?

Unlikely. The PPTA will identify potential adverse impact on women and/or girls if any and design mitigation measures in a gender action plan if impacts are identified.

4. Indicate the intended gender mainstreaming category: ☒ EGM (effective gender mainstreaming)

III. PARTICIPATION AND EMPOWERMENT

1. Who are the main stakeholders of the project, including beneficiaries and negatively affected people? Identify how they will participate in the project design.

The five participating provincial people's committees, their departments of agriculture and rural development, provincial department of labor, invalids and social affairs, and departments of industry and trade, together with local communities/irrigated agriculture producers, agri-business community are the principal stakeholders. People's committees and their relevant departments will participate in scoping during project design while local communities/irrigated agriculture producers, agri-business community will participate in consultation to identify their needs, opportunities, constraints and project interventions to ensure their full participation, benefit and mitigation of negative impacts (such as of resettlement, etc.).

2. How can the project contribute (in a systemic way) to engaging and empowering stakeholders and beneficiaries, particularly, the poor, vulnerable and excluded groups? What issues in the project design require participation of the poor and excluded?

The project will contribute to engaging and empowering stakeholders and beneficiaries, particularly the poor, vulnerable and excluded groups through consultations, information sharing on project design and implementation. Participatory workshops will be conducted during initial design to understand stakeholder (including the poor, vulnerable and excluded groups) expectations, needs, and constraints. Participation of the poor and excluded people's representatives in design would address resettlement issues arising from canal re-alignment and any associated access roads needed to market agricultural products. Constraints to their participation in design and benefit from project's components, will be addressed by the social and gender specialist in the PPTA.

3. What are the key, active, and relevant civil society organizations in the project area? What is the level of civil society organization participation in the project design?

☒ Information generation and sharing ☒ Consultation ☐ Collaboration ☐ Partnership

Viet Nam's Women Union is an active civil society organization in the proposed project areas. There are other nongovernment organizations active in these areas assisting in the implementation of other development initiatives. Where relevant, these will be invited to collaborate with the PPTA to support their members/beneficiaries to participate in project design deliberations during information sharing and consultation.

4. Are there issues during project design for which participation of the poor and excluded is important? What are they and how shall they be addressed?

Yes. The issues for which participation of the poor and excluded important include: Resettlement, assessment of accessibility to rehabilitated irrigation infrastructure for agriculture and rural products; assessment on needs, expectation and constraints related to agro-business support (involving women and ethnic minorities in value chain

investigations). Stakeholder workshop to discuss and consult the issues above will be organized during PPTA.

IV. SOCIAL SAFEGUARDS

Involuntary Resettlement Category A ☐ B ☒ C ☐ FI ☐

1. Does the project have the potential to involve involuntary land acquisition resulting in physical and economic displacement? If yes. Please explain, and provide information on the extent of land and assets acquisition and the estimated number of affected persons. Also describe actions/measures to be conducted during due diligence to address involuntary resettlement.

Rehabilitation/upgrading of existing irrigation infrastructure may result in minor land acquisition and impact on some structures along the canal alignments. The impacts will be assessed during the preparation of feasibility studies. If significant land acquisition is required, the subproject will be ruled ineligible for project financing. A resettlement framework will be prepared to guide subproject screening and resettlement plan preparation.

2. What action plan is required to address involuntary resettlement as part of the PPTA or due diligence process?

☐ Resettlement Plan (in case of confirmed involuntary resettlement impacts) ☒ Resettlement Framework

Indigenous People's Category A ☐ B ☒ C ☐ FI ☐

1. Does the proposed project have the potential to directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples? ☒ Yes

2. Does it affect the territories or natural and cultural resources indigenous peoples own, use, occupy, or claim, as their ancestral domain? ☒ No.

The improved productivity in the project areas is expected to benefit the local population, including ethnic minorities. In addition, the project will potentially benefit the ethnic minority people with employment opportunities during and after civil works construction, facility operations and maintenance, and other capacity building initiatives. Potential adverse impacts, if any, will be related to minor loss of land and structures that are owned or used by households belonging to ethnic minorities as a direct result of the irrigation canal realignment and will be settled with compensation in kind within the rehabilitated command areas. A due diligence review will be done during the PPTA to verify potential positive and negative impacts on ethnic minorities.

3. Will the project require broad community support of affected indigenous communities? ☒ No Please explain

The project interventions do not involve any commercial development or incursion into natural resources in ethnic minority communities and will not result in their displacement from ancestral domain/traditional areas.

4. What action plan is required to address risks to indigenous peoples as part of the PPTA or due diligence process?

☒ Indigenous peoples plan (in case of confirmed impacts on specific ethnic minority communities)
☐ Indigenous people's planning framework ☐ Social impact matrix ☐ Environmental and social management system arrangement ☐ None

V. OTHER SOCIAL ISSUES AND RISKS

1. What other social issues and risks should be considered in the project design?

☒ Creating decent jobs and employment ☒ Adhering to core labor standards ☐ Labor retrenchment
☐ Spread of communicable disease including HIV/AIDS ☐ Increased human trafficking ☐ Affordability
☐ Increased unplanned migration ☐ Increase in vulnerability to natural disasters ☐ Creating political instability
☐ Creating internal social conflicts ☐ Others please specify.

2. How are these additional social issues and risks going to be addressed in the project design?

Further investigation on the risks will be conducted under the TA and if the risks are real, measures to address would be included in the project designs outcomes where relevant.

VI. PPTA DUE DILIGENCE RESOURCE REQUIREMENT

1. Do the terms of reference for the PPTA (or other due diligence) contain key information needed to be gathered during PPTA or due diligence process to better analyze (i) poverty and social impact; (ii) gender impact, (iii) participation dimensions; (iv) social safeguards; and (v) other social risks? Are the relevant specialists identified?

☒ Yes ☐ No.

2. What resources (e.g., consultants, survey budget, and workshop) are allocated for conducting poverty, social and/or gender analysis and participation plan during the PPTA or due diligence?

Social and gender specialists (international, 1 person-month and national, 4 person-months) and resettlement specialist (national, 4 person-months) to conduct due diligence. Planned workshop budgets to inform local population of project activities and beneficiary participation - $20,000.

[a] The CPS (2012-2015) has been extended until 2016 while a new CPS (2016-2020) is being prepared.

[b] Ministry of Labour – Invalids and Social Affairs. 2015. Quyết định phê duyệt kết quả điều tra, rà soát hộ nghèo, hộ cận nghèo năm 2014 (The Decision No. 1294 on MOLISA's Approval of the results of the Review of poor and near poor households in 2014), access via link: http://thuvienphapluat.vn/van-ban/Van-hoa-Xa-hoi/Quyet-dinh-1294-QD-LDTBXH-phe-duyet-ket-qua-dieu-tra-ra-soat-ho-ngheo-ho-can-ngheo-2014-290844.aspx#

[c] Ministry of Planning and Investment. 2010. Official Report – Population and Housing Census 2009 (page 1). Ha Noi.