Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 22-Nov-2022 | Report No: PIDC35265

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Vietnam	P179572		Mekong Delta Climate Resilience and Integrated Transformation Project (MERIT) (P179572)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EAST ASIA AND PACIFIC	Mar 11, 2024	Dec 14, 2023	Environment, Natural Resources & the Blue Economy
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Ministry of Finance	Ministry of Agriculture and Rural Development (MARD)	

Proposed Development Objective(s)

To enhance climate resilience and improve livelihoods in select areas of Vietnam's Mekong Delta.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	450.00
Total Financing	450.00
of which IBRD/IDA	350.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	350.00

Non-World Bank Group Financing

Counterpart Funding	100.00
Borrower/Recipient	100.00

Environmental and Social Risk Classification	Concept Review Decision
Substantial	Track II-The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. **During the past decades, Vietnam has achieved strong and sustained economic growth, resulting in poverty reduction and broad improvements in overall living standards**. Since the 1990s, a series of political and economic reforms have helped transform Vietnam from one of the poorest countries in the world to an internationally competitive, lower middle-income country with an estimated gross domestic product (GDP) per capita of US$3,371 at the end of 2021.[1] Between 1990 and 2021, real GDP grew at an average annual rate of 6.6 percent.[2] This growth, coupled with the government's strong focus on inclusive social development, has enabled Vietnam to broaden shared prosperity and almost eradicate extreme poverty (under US$1.90/day in 2011 PPP) from 51.9 percent to 1 percent between 1993 and 2020.[3] The country's moderate poverty rate, based on the lower middle-income country poverty line of US$3.20/day (in 2011 PPP), fell from 79.7 percent in 1992 to less than 5.0 percent in 2020.[4]

2. **Building on its impressive development track record, the country now aims to attain high-income status by 2045**. Achieving this will require not only an accelerated pace of economic growth (of more than 5.5 percent per year), but also a new pattern of growth. Natural resource mismanagement and other practices detrimental to the environment, major features of the existing unsustainable growth model, are already leading to significant economic costs that threaten the economy's growth potential and competitiveness.[5] The government of Vietnam (GoV) has acknowledged the scale of the country's depleted natural capital and prioritized the development of more productive physical and human capital in the latest *Socio-Economic Development Strategy (SEDS) 2021–2030.*[6] In addition, through its *National Strategy for Green Growth in the 2021–2030 Period,*[7] the GoV aims to forge a carbon-neutral economy, restore and better protect natural ecosystems, and green and redefine the competitive advantage of its key sectors. Realizing these visions will require significant efforts, comprising coordinated policies, regulatory measures, and public spending reforms; changes in the incentive structure for producers and resource users; and major private sector initiatives.

3. **The Mekong Delta Region (MKD) has been crucial to the achievement of Vietnam's national development objectives.** It comprises 12 percent of the national territory, contributes 18 percent of the country's GDP, and is home to approximately one-fifth of its population. It is Vietnam's leading agricultural region and an important hub for tourism and other services. The region accounts for one-

[1] GDP per capita in constant 2015 US dollars. Source: World Development Indicators (World Bank 2022).
[2] Based on GDP in constant 2015 US dollars. Source: World Development Indicators (World Bank 2022).
[3] World Bank (2022). Vietnam Poverty and Equity Assessment 2022.
[4] World Bank (2022). Vietnam Poverty and Equity Assessment 2022.
[5] A recent World Bank study, "Accelerating Clean, Green and Climate Resilient Growth in Vietnam," estimated the welfare-based costs of environmental degradation at 10 percent of GDP.
[6] See Ministry of Investment and Planning, Vietnam Socio-Economic Development Strategy: 2021-2030, February 2021.
[7] See Decision No. 1658/QD-TTg by the Prime Minister on National Strategy for Green Growth in the 2021-2030 period, dated October 1, 2021.

third of the nation's agricultural GDP, just over half of its rice and fish production, more than two-thirds of its fruit production and aquaculture output and has played a leading role in the growth and diversification of Vietnam's agro-food exports. Over recent decades, this region has emerged as an agricultural commodity powerhouse, feeding Vietnam and the rest of the world.

4. **The MKD, however, has become an economic development laggard.** The MKD's historical role as the country's food basket has been gradually weakened because of multiple factors (e.g., issues related to land use policy, natural resource management, human capital development, and institutional capacity), and this trend is exacerbated by climate change. The MKD's main economic indicators have fallen short of the national averages and the region has fared worse than other regions in relation to a wide range of socioeconomic indicators, including income per capita,[8] human development,[9] job creation, and industrial development. A dearth of remunerative job opportunities has led to widespread outmigration, especially among young adults. With net outmigration reaching 39 percent over the period 2009–19, the MKD's population has remained stagnant and is rapidly aging.[10]

5. **Vietnam, in particular the MKD, is vulnerable to climate change.** Multiple assessments place Vietnam among the world's countries most vulnerable to climate change. Germanwatch Global Climate Risk Index for 2000–19 ranks Vietnam as the 13th most vulnerable of the 180 countries. Among the regions in Vietnam, the MKD is one of the most severely exposed to climate change risks due to its flat topography and subsiding plains. If sea levels rise by 75–100 centimeters relative to 1980–99 levels, almost half of the delta's area would be inundated. Recent projections from the Ministry of Natural Resources and Environment (MONRE) indicates that the sea levels are expected to rise 24-28 cm by 2050 and 56-77 cm by 2100 in the East Sea. This is likely also an underestimation as it does not incorporate human-induced subsidence caused by reductions in sediment influx from upstream dams and the overextraction of groundwater and extensive sand mining. In the absence of immediate adaptation measures, about 45 percent of the MKD area will be affected by saltwater intrusion, resulting in an estimated total economic loss of some US$17 billion by 2030.[11] As a result of sea-level rise and other factors, the region is projected to become a major climate out-migration hotspot by the middle of this Century.[12] Detailed and operationally feasible climate change adaptation strategies, incorporating economic development scenarios, are therefore urgently required to ensure that the emerging climate change threats do not undermine the MKD's path toward sustainable growth.[13]

6. **Recognizing the climate and development challenges in the MKD, the government has set out its long-term plan and vision through (a) the 2017 Prime Minister's Resolution 120 on Sustainable and Climate-Resilient Development of the Mekong Delta, and (b) the Mekong Delta Regional Master Plan 2021-2030 with a vision to 2050 (MDRMP) approved in 2022[14]**. The resolution 120's vision for transforming the region's economy represents a set of fundamental paradigm

[8] Monthly income per capita in the MKD (current prices) is 12 percent lower than the national average in 2021 (GSO 2022).
[9] The region's Human Development Index continues to significantly lag behind that of the national average and most provinces in the region have an HDI score among the bottom one-third of Vietnamese provinces (Global Data Lab 2022).
[10] Annual Economic Report Mekong Delta 2020 (VCCI 2021).
[11] Vietnam Country Climate and Development Report (World Bank 2022).
[12] Groundswell Part 2: Acting on Internal Climate Migration (World Bank 2022).
[13] World Bank (2022).
[14] See Resolution No.120/NQCP approved by the government of Vietnam dated Nov 17, 2017, and Decision No.287/QD-TTg on Mekong Delta Regional Master Plan in the period of 2021-2030 with a vision to 2050 approved by the Prime Minister on Feb 28, 2022.

shifts from engineered solutions in support of land and water use for intensified rice and the orthodox climate defense approach, to a “living with nature” philosophy. The latter focuses on the protection of natural ecosystems and their restoration through both nature-based and hard infrastructure solutions, as well as the adjustment of land and water uses toward less rice-focused, more profitable, socially valuable, and more environmentally sustainable patterns reflecting climatic, economic, market, and other changes. As such, the administrative unit–based and narrow sectoral planning will be replaced by a landscape approach where the region is divided into three hydro-ecological zones (freshwater, intermittent fresh-brackish water, and saline water) to promote different agricultural production systems suited to each zone, and mixed farming systems together with complementary services (e.g., landscape tourism) and non-farm (i.e., agro-processing, logistics) ventures. Applying this vision will require improved integration and regional coordination for planning and investments in the hydro-ecological zones that cut across provinces, monitoring and enforcement of regulations/policies, modernized and flexible infrastructure systems, and technical and financial support to assist accelerated shifts in land uses, farming practices, and market linkages.

Sectoral and Institutional Context

7. **The MKD’s efforts to intensify crop production and accelerate economic development over the last few decades has led to many challenges related to land and water management.** From the 1990s until very recently, the region’s leading mandate was to increase rice production, through area expansion and intensification to meet national food security objectives.[15] To manage the seasonal flood waters from upstream and tidal surges from the sea, major land and water resources were devoted primarily to protecting and bringing fresh water to large rice-growing areas through massive engineering of the landscape with extensive irrigation and drainage networks. Rice production grew over time allowing for the emergence of a large, if only modestly profitable export trade. Gradual changes in land use in recent decades resulted in expanded production of higher value fruit and aquatic products. As farmers needed more freshwater resources for rice production and shrimp farming, they increasingly relied on groundwater extraction, especially during the dry seasons. At the same time, illegal sand mining activities of up to 7 million cubic meters per year, fueled by an infrastructure boom, negatively affected sedimentation. In addition, the groundwater overexploitation and reduction in sedimentation (especially due to upstream dam development) have contributed to land subsidence in the region, amplifying the effects of riverbank erosion, coastal erosion, floodwater drainage congestion and salinity intrusion. Many past interventions meant to prevent flooding in the upper MKD, control salinity in the coastal areas, and deliver freshwater for rice cultivation have had unexpected negative side effects in many locations. For example, some sluice gates used for salinity control have created barriers for water-based transportation, preventing fertile sediment to enter the fields and the degradation of agricultural lands. Some of these structures aid eutrophication and the creation of water hyacinth clusters, causing water pollution and posing further barriers to waterway connectivity.

8. **The MKD also faces challenges related to natural resource degradation and environmental pollution.** These include declining capture fishery resources, deterioration of surface water quality, and degradation of the environment and ecosystems. Due to aquacultural expansion, the pace of deforestation and degradation of mangroves has accelerated, contributing to coastal erosion.

[15] Most agricultural land was officially designated as ‘rice land’, with restrictions placed on alternative uses. Restrictions were also placed on landholding sizes. In many areas, the resultant pattern of land use was inefficient and capped the income potential of farmers.

The forest cover in the region declined from 8.25 percent in 2006 to 5.4 percent in 2019.[16] In the drive to expand output, production has been intensified by increasing input use (e.g., fertilizers, chemicals, feeds, plastics and antibiotics) and aquaculture pond density. These practices and others (e.g., burning of rice husks) have contributed air, land, and water pollution. Some of the infrastructure investment such as sluice gates prevented chemicals and other pollutants from being flushed out, which further degraded the environment. In addition, the development of dams for hydropower and for irrigation off-take in the upstream reaches of the Mekong River is altering the MKD's ecosystem, via the reduced flow of the seasonal flood and sediment which has been vital for the soil fertility and the fisheries resources of the MKD. Some of these agricultural, hydropower and industrial diversifications have given rise to adverse environmental impacts, and the loss of forests, especially mangroves, which has increased the vulnerability of the region to extreme weather events.

9. **Agricultural production in the MKD has primarily remained small-scale and fragmented, entailing significant risks for individual farmers, as well as limiting the region's economic potential and opportunities for private sector investments**. The focus on yields and production volume has led to policies and resource management systems favoring multi-season monoculture production of rice. In many locations, this has not been an efficient or climate-smart use of land. For most farming households, operating on very small landholdings, the promotion of rice monoculture has capped their income potential. Agricultural products have been of uneven quality and the intensive input use has contributed to food safety concerns. Fragmented value chains, underdeveloped storage infrastructure, and a lack of coordination of production with demand requirements have led to significant post-harvest physical and quality losses. In the leading export sub-sectors, farmers' profits have been either low (rice) or highly variable (shrimp and fruit), environmental costs have been unaccounted for, and Vietnam has realized little value addition. Fragmented organization, resource and operational inefficiencies and limited value addition are the main reasons why the MKD's booming commodity exports have failed to give rise to shared prosperity, a vibrant rural economy, or attractive opportunities for the MKD's educated youth.

10. **The MKD's inherent vulnerabilities to climate change pose an existential threat to communities, industries, and livelihood opportunities**. The delta is one of the world's areas most vulnerable to sea-level rise, with more than half of its land being less than one meter above sea level and prone to inundation. More extreme weather—marked by higher mean temperatures, intensified rainy seasons, extended dry seasons and storm surges—poses major threats to agricultural productivity and work in other industries. For example, the number of hot days (≥ 35°C) is expected to increase by 25–40 days by mid-century.[17] During the rainy monsoon season, floods cover large areas of the MKD and cause extensive damage to infrastructure and disrupt services, especially in inland areas. During the dry season, low freshwater flow and droughts lead to saline intrusion, which greatly affects freshwater availability for agriculture and domestic use in the coastal areas. Extreme weather events such as storm surges, flooding, and droughts are projected to increase in frequency and/or intensity in the MKD. These climate impacts will disproportionately affect the region's most vulnerable populations—among others, landless people, and ethnic minority communities—as these groups are less able and have fewer options to adapt to and cope with forced changes in livelihoods.[18]

[16] Forest status MARD (2020).
[17] 2020 Climate Change Scenarios (MONRE 2021).
[18] Groundswell Part 2: Acting on Internal Climate Migration (World Bank 2022).

Institutional context

11. **Recognizing the climate and development challenges in the MKD, the government has set out its long-term plan and vision through Resolution 120 and the MDRMP.** Resolution 120 provides an adaptive development model in the MKD toward greater sustainability, emphasizing an integrated approach to planning and a shift toward living more in harmony with nature. It serves as an authoritative foundation for transforming the region's development model—from a small household farm and provincial perspective to an inter-provincial and delta-wide one; from a short-term sectoral perspective to a long-term, multisectoral and integrated approach. The MDRMP focuses on managing challenges and creating values. Development efforts in the region must simultaneously aim to: (i) adapt to the changing conditions (i.e., climatic shifts, sea-level rise, altered water and reduced sediment flows from the upstream sections of the Mekong River, and demographic and market changes); (ii) adjust agricultural priorities to transition from low-quality rice to aquaculture and fruits, and redefine the region's agricultural competitive advantages; and (iii) better protect and restore the natural environment that has been degraded through unsustainable farming practices, fragmented planning, and poorly designed and uncoordinated infrastructure interventions.

12. **Complementing the GoV's efforts, progress has been made in fostering sustainable livelihood transition and regional coordination**. Some of this progress has been realized under the auspices of World Bank–supported projects such as the Mekong Delta Integrated Climate Resilience and Sustainable Livelihoods (MD-ICRSL) Project covering nine provinces in MKD and the Vietnam Sustainable Agricultural Transformation (VnSAT) Project, which covered eight provinces in MKD. Under the MD-ICRSL Project climate-resilient farming practices following the "living with nature" principle of Resolution 120 have been adopted in over approximately 200,000 hectares. Knowledge management and data sharing have also progressed, thanks to regional investments in the expansion and upgrading of the monitoring network for surface water and groundwater, and the creation of knowledge management platforms and regional decision support systems such as the MKD Center.[19] The VnSAT Project supported rice production in about 184,000 hectares in MKD through the introduction of sustainable farming practices that also increased yields, boosted income and reduced greenhouse gas emissions. The proposed MERIT project aims to build on lessons and experience gained from these two projects.

13. **Although progress has been made, especially at the strategic and policy level, a number of gaps need to be addressed to attain the sustainable development and climate resilience envisaged in the MDRMP:**

a. *Inadequate infrastructure*: At the regional, subregional, and provincial levels, the current infrastructure systems inhibit the transition of livelihoods to align better with the hydro-ecological zoning. These were designed, constructed, and operated to deliver freshwater resources for rice cultivation, and they effectively block the ability of farmers to change their agricultural production patterns to be more suitable to the transition (freshwater-brackish) and saline water zones. There is an urgent need to repurpose and upgrade the existing irrigation infrastructure, guided by coherent spatial planning.

[19] The Mekong Delta Center (MKDC) serves as a hub for Delta-wide information, including water, land use, environmental and climate change information, education, and outreach. The foundation of the Center is a "knowledge management platform" (KMP) which is a GIS-based computer system providing MONRE (assigned by the GoV as the center's owner) and other stakeholders with the capability to integrate various data bases and models to help investigate the environmental and climate impacts and support decision making on the delta development.

b. *Unsustainable farming practices (rice, aquaculture, horticulture)*: Groundwater overexploitation and overuse of chemicals and pesticides are causing land degradation and water pollution. Conversion and/or thinning of mangrove forests is in turn having a negative impact on yields and is exposing agricultural investments such as aquaculture ponds to climate induced risks. The mainstreaming of safer, environmentally friendly, and climate-smart farming practices by farmers and fishers is hindered by the lack of technical know-how, incentives, and support schemes.

c. *Weak coordination in addressing regional issues such as irrigation system management, coastal management, riverbank erosion management, sedimentation management including controlling sand mining, flood retention and groundwater management*: There is limited institutional capacity, partly explained by a legacy of poor policies (both formulation and implementation), planning and coordination across sectors and provinces, gaps in legal and institutional frameworks, and a lack of capacity for collective action to address these regional issues. The fragmentation of data, information, and analysis across provinces and agencies (affiliated with different ministries), and the absence of data sharing protocols, have further limited collaboration and coordination across the delta.

d. *Lack of concerted efforts to promote livelihood transitions around key elements such as skills development, improved access to markets and finance, and deepened private sector engagement*: Service barriers exist in some areas, and access to financing, and social safety nets remain underdeveloped. There is an absence or insufficient support for farmers—in terms of the knowledge, skills, and know-how they need to successfully transition from low-value rice to higher-value aquaculture, horticulture and agriculture, or other natural resource-based livelihoods such as ecotourism, food processing, and handicrafts. These gaps also exist between different social groups, such as men and women, landless, and youth. Private sector participation in agriculture and in supporting sectors in the region is limited due to the lack of incentives and enabling infrastructure. For an agriculture-based region, there have been relatively few new SME entrants into the sector, and there is growing concern about the continuity of farming and who will constitute the next generation of farmers.

Relationship to CPF

14. **MERIT is aligned with the current and upcoming Country Partnership Framework (CPF) for Vietnam.** It contributes to focus area 3 (Ensure Environmental Sustainability and Resilience) of the current CPF. It is also aligned with the latest draft[20] of the proposed CPF for FY 2023–27, especially two objectives under Higher Level Objective 1 (Climate resilience strengthened and sustainable growth attained), namely, objective 1: Strengthen climate resilience and promote sustainable growth of infrastructure, cities, and regions; and objective 3: Reinforce sustainable management of natural resources.

15. MERIT is also aligned with the World Bank Group Climate Change Action Plan 2021–2025 and is consistent with the views and priorities laid out in the Vietnam Country Climate and Development Report (CCDR). MERIT falls under the first of four priority areas identified by the CCDR, which calls for a coordinated regional program for the MKD. The CCDR states that this coordinated program should focus on stemming land subsidence and saltwater intrusion, retrofitting existing physical assets to be

[20] Draft Country Partnership Framework for Vietnam for the period FY 23–27 (Concept Note). This may undergo significant changes, following the review process.

less vulnerable to inundation, ensuring climate-informed development, and strengthening the Mekong Delta Regional Coordination Council (RCC).[21]

C. Proposed Development Objective(s)

To enhance climate resilience and improve livelihoods in select areas of Vietnam's Mekong Delta.

Key Results (From PCN)

16. **PDO level indicators:** The achievement of the PDO will be tracked with the following indicators:
- Increase in area (ha) under climate-resilient[22] land-use and water management practices in project locations;
- Percentage (and number) of beneficiaries adopting improved and/or climate-resilient livelihood activities[23] (% of which are females);
- Total number of direct project beneficiaries (% of which are females); and
- Percentage of beneficiaries who are satisfied with the project's support and services (%).

17. These indicators will be complemented by intermediate outcome indicators and output-level indicators (e.g., number of kilometers of canal upgraded).

18. **Project beneficiaries:** The expected primary beneficiaries are farming and non-farming households, and national and provincial government agencies involved in development planning, natural resources management, and implementation of the project. Other stakeholders and communities of the rural economy in the project area are secondary beneficiaries.

D. Concept Description

A. Concept

19. **MERIT would include strategic investments that complement several ongoing or planned initiatives fostering climate resilience and/or pursuing broad-based economic growth within the MKD.[24]** The proposed project is part of the World Bank's long-term engagement in the MKD, with multiple on-going and future projects envisaged to contribute to the operationalization of the MDRMP, enhancing the climate resilience of people, livelihoods and assets, and the sustainable development of the region. A Multiphase Programmatic Approach (MPA) would be the most suitable instrument to support this long-term engagement. However, with discussion ongoing between the GoV and the World Bank on the feasibility of aligning the MPA instrument with government's internal regulations, the project is for now presented as an Investment Project Financing. If an MPA is not feasible, this could also be

[21] The RCC was established in 2020 to promote regional coordination in the MKD. It is chaired by the Deputy Prime Minister and includes ministers from key central ministries and Provincial People's Committee (PPC) Chairs from all MKD provinces.
[22] Climate-resilient land-use practices are defined as diversification of the land use from rice-intensive or low-value cropping to higher-value produce, aquaculture, horticulture, other salt-tolerant crops, and small livestock.
[23] Improved and/or new climate-resilient livelihood activities are defined as sustainable agricultural, service sector (i.e., landscape tourism), or other business practices which form the core of major certification schemes (i.e., VietGAP/GlobalGAP, Eco Certification for tourism, ISO 22000 for Food Safety Management).
[24] Some of these initiatives are also supported by development partners (DPs). Twenty-four DPs are coordinating their support for the MKD through a DP Working Group co-chaired by the WB. These initiatives include investments (such as dikes and wave breakers, irrigation infrastructures, mangrove afforestation/reforestation), the provision of technical assistance (e.g., related to ecosystem restoration, pollution management, agriculture practices, and water management), facilitating knowledge sharing via workshops and conferences, and/or promoting private sector partnerships with farmers. Many, albeit not all those interventions are being undertaken on a modest scale with a limited geographic scope.

structured as a Series of Operations (SOP) to ensure an integrated long-term approach. Since the GoV's internal review of the project has not concluded, the activities proposed in this concept note may need to be adjusted during preparation. The team is also actively exploring opportunities for grant co-financing to support key technical assistance and capacity building activities.

20. **The proposed project would provide critical resources and guidance to operationalize the vision and strategies laid out in the MDRMP and address current and future climate change impacts.** The project would (i) help to build mechanisms and tools for regional coordination, and further enhance the capacities for data and information collection and analysis and support the development of policies and modalities for data sharing among institutions (public and private) and across different stakeholders; (ii) contribute to building new infrastructure and to repurposing and upgrading existing climate-resilient infrastructure at the regional and subregional levels to support the transformation of the agricultural sector and promote more sustainable management of natural assets, including water resources; and (iii) support the repurposing and upgrading of infrastructure at the provincial level as well as other interventions to facilitate more diversified livelihoods, more efficient value chains, more dynamic agro-entrepreneurship, and an accelerated adoption of sustainable practices.

21. Project activities would be grouped into four components: (i) strengthening institutions and information systems; (ii) investing in climate-resilient infrastructure for regional impacts; (iii) promoting diversified livelihoods and climate-smart rural economy; and (iv) project management and monitoring and evaluation. Best practices for low-carbon development will be prioritized across all components (e.g., reduction in energy consumption of agriculture operations, increasing carbon stock of soil, minimizing methane emissions, reducing carbon intensity of aquaculture, and reducing food loss). Across the project components and activities, differentiated impacts of climate change and the needs of different social groups, such as for women, landless workers, and youth will be addressed.[25]

22. **Component 1: Strengthening institutions and information systems.** The proposed aim of component 1 is to further enhance the data and information infrastructure and institutional capacity, including knowledge generation and sharing, and development of policies and procedures that will enable sustainable and coordinated planning and investment decision making across the MKD. The targeted primary beneficiaries of activities under this component are national and provincial government agencies involved in planning and management (i.e., the Ministry of Agricultural and Rural Development (MARD), provinces in the MKD, and relevant ministries). Component 1 includes the following subcomponents:

- **Subcomponent 1.1: Improving and scaling up monitoring systems for water, climate, and environment.** This subcomponent would finance civil works, including new systems for monitoring water and environmental quality (involving monitoring stations, equipment, hardware, and software), and upgrade and extend existing monitoring networks at provincial and community levels.[26] It would also finance technical assistance and training on digital technology-based operation systems; capacity building and information/knowledge sharing for more efficient resource use and more effective planning, early warning, and decision making at regional, provincial and community/farm levels. The subnational and local monitoring networks

[25] A study is currently underway to look into perception and needs of different social groups in the MKD who are impacted by climate change and/or facing livelihoods transition. Findings of the study are expected to inform the project design and activities.
[26] These activities are aligned with the National Natural Resources and Environment Monitoring Master Plan (PM Decisions 90 and 432) and provincial monitoring plans.

would be connected to and synchronized with regional decision support systems (such as the MONRE's MKD Center and the MARD's Forecast Center, housed in the Southern Institute of Water Resources Research (SIWRR) in Ho Chi Minh City).

- **Subcomponent 1.2: Strengthening regional coordination in planning and investment.** This subcomponent would support the operationalization of selected regional coordination mechanisms. These mechanisms may include establishment and operationalization of specialized subcommittees under the MKD RCC—focusing on selected themes (e.g., agriculture and sustainable livelihoods). This subcomponent would also enhance the knowledge base and improve planning tools and management mechanisms to address regional issues identified in the MDRMP and enhance regional coordination. It would do so by financing studies, modelling, and the formulation of technical guidelines to inform the development of policies and regulations and by supporting the formulation of master plans and programs in priority thematic areas (e.g., integrated coastal zone management, delta sedimentation management). The subcomponent provides the framework to undertake future strategic investments that address regional issues in a well-coordinated, effective, and sustainable manner.

23. **Component 2: Investing in climate-resilient infrastructure for regional impacts.** The aim of component 2 is to build, upgrade or repurpose infrastructure, to build resilience to climate hazards and to facilitate more diverse agricultural production systems and livelihood opportunities. These interventions are intended to reduce the vulnerability of natural assets that are most at risk to climate hazards, such as those located on the coasts and riverbanks that are subject to high rates of erosion. In addition, the component would support interprovincial backbone infrastructure (e.g., irrigation networks) that is critical for regional economic development. The interventions will also seek opportunities to reduce greenhouse gas emissions. The primary beneficiaries are rural communities and farming households in transition and those that are most vulnerable to climate change. Component 2 includes the following subcomponents:

- **Subcomponent 2.1: Implementing integrated solutions[27] to protect regional natural assets.** This subcomponent would finance multipurpose infrastructure at interprovincial scale to address climate-induced hazards such as flooding, drought and storm surges. This will entail a combination of green (e.g., mangroves, coastal forests, and use of natural materials for riverbank and coastal stabilization) and gray infrastructures (e.g., wave breakers, coastal dikes, and riverbank enforcement structures). These interventions will be implemented at the inter-provincial level *and* the provincial level to protect natural assets (e.g., coasts and riverbanks) and communities from climate hazards.

- **Subcomponent 2.2: Improving interprovincial infrastructure for agricultural transformation.** This will entail specific investments implemented at the inter-provincial level, including upgrading and modernizing: (i) the vast interprovincial irrigation and drainage infrastructure network (e.g., canals, sluices, pumps, weirs, and diversion structures); and (ii)

[27] Integrated solutions indicated a suit of interventions that go beyond single sectoral responses to problems (i.e., infrastructure measures) and expand the solution space following an integrated approach (e.g., land use changes or improved livelihoods practices). An example of an integrated solution to coastal management would be a combination of wave breakers for erosion, mangrove protection/planting, changes to land use and livelihoods behind the sea dike and potentially sea dike realignment to address coastal squeeze.

connectivity infrastructure (e.g., climate-smart rural roads, ship locks). The improvements to infrastructure would contribute to (i) more suitable farming and aquaculture that is aligned with hydro-ecological transition zones, and (ii) access to markets, including reduced production losses due to extreme weather events.

24. **Component 3: Promoting diversified livelihoods and climate-smart rural economy.** This component aims to accelerate livelihood transitions aligned with the MDRMP, specifically its proposed hydro-ecological transition zones for 2030 and 2050. One of the core criteria for selecting activities for project financing would be ensuring that they are market driven. The transitions envisaged in Resolution 120 and the MDRMP would require up-front investments that carry transitional risks and could cause financial distress, thus hindering the buy-in of farmers and SMEs. Support will also be given to the pursuit of other natural resource-based livelihoods (for example, flood-based agriculture and ecotourism) in rural areas. Similar to Component 2, interventions will also seek opportunities to reduce greenhouse gas emissions. The beneficiaries would include farming households and groups, SMEs and other agro-enterprises, and other stakeholders seeking improved livelihoods in the region. Component 3 includes the following subcomponents:

- **Subcomponent 3.1: Supporting community-based infrastructure at provincial level.** This subcomponent would finance the following infrastructure which will complement interprovincial infrastructure supported under subcomponent 2.2 and link them to the local/farm level: (i) irrigation infrastructure (e.g., canals, embankments, sluices/culverts, and pump stations); (ii) connectivity infrastructure (e.g., climate-smart roads, bridges, and ship locks); and (iii) basic infrastructure for the investment environment. This basic infrastructure would facilitate expanding and deepening the value chain (e.g., public facilities for ecotourism, water supply and sanitation facilities). This would not only enhance farmers' and rural communities' access to market and livelihood diversification but also facilitate private sector engagement for value chain development.

- **Subcomponent 3.2: Scaling up climate-smart livelihood practices and strengthening value chains.** This subcomponent would engage with financial institutions to improve access to finance and de-risk investments by supporting: (i) a competitive grant scheme or public-private programs for farmers, farmer organizations, and SMEs to invest in transition-enabling infrastructure (e.g., on-farm and community infrastructure, cold storage); (ii) productive alliances between farmer groups/cooperatives and companies (with financing incentives provided to the cooperatives for post-harvest and other collective infrastructure upgrades as well as for technical assistance to accelerate adoption of sustainable practices); and (iii) digital infrastructure to strengthen systems of product and raw material traceability, within the focal value chains (e.g., rice, shrimp, fish, coconuts, and other agriculture produce). Carbon and/or climate finance could be mobilized to support the implementation of these activities. This sub-component requires either counterpart funding or sizable grant from development partners.

- **Subcomponent 3.3: Strengthening human capital and fostering entrepreneurship.** This subcomponent would finance: (i) technical guidance and training for SME start-ups, through an incubation program; (ii) guidance and training to meet market standards through organic, VietGAP, and commodity-specific certifications; (iii) promotion of technological and digital skills,

including e-commerce and other direct marketing of food, handicrafts and other nature-based products, and ecotourism services; and (iv) training for farmers exiting agriculture, especially for female farmers who can play an important role in certain value-chains and industries,[28] to acquire new livelihood skills in sectors such as ecotourism, logistics, and the food industry. Similar to sub-component 3.2, implementation of these activities would require counterpart funding or grant financing from development partners.

25. **Component 4: Project management and monitoring and evaluation (M&E).** The objective of this component is to support coordinated, effective, and efficient implementation of project activities, including fiduciary management, environmental and social risk management, and M&E.

26. **Project financing:** The estimated financing amount is between US$450 and US$600 million, of which US$350–450 million would be financed by IBRD and US$100–150 million would involve counterpart funding. The amount will be revised once all project proposals developed by MARD and the participating provinces are formally submitted to the Prime Minster for approval. Given the GoV ODA rules, grant funding will need to be secured for the financing of “soft” activities.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

Overall, the project will bring about significant environmental and social benefits, contribute to improving climate resilience and livelihood, addressing current and future climate change impacts under the visions set out in the MDRMP. The Project?s potential adverse environmental impacts and risks are mainly caused by the investments on infrastructure proposed under Components 2 and 3. The proposed physical investments include dredging interprovincial large canals, construction of wave breakers, upgradation of coastal dykes and river embankments in combination with roads and bridges, building ship-locks, sluices and pumping stations, and agriculture value chain development infrastructures. There will be common construction impacts and risks such as dust, noise, waste and wastewater, increased erosion potentials sedimentation and flooding risks, health and safety risks for local communities and the workers. There are also specific impacts and risks depending on the typology, nature and scale of the physical interventions and the sensitivity of the sites. Dredging of hundred kilometers of interprovincial canals could generate millions cubic meters of sediments/ dredging materials. These canals are man-made and requires periodical maintenance dredging. Sampling data in past projects shows that the contents of heavy metals were mostly within allowable limits). Connecting with big rivers but the canals also fed by untreated municipal wastewater and agricultural flows, turbid water with overgrow of water hyacinths are commonly observed. Although survey is needed, it is not expected that these canals are biologically important. Storage and/or disposal of dredged materials may cause dusts, odor, loss of vegetation cover, increased localized flooding and/or sedimentation risks. Dredging will unavoidably remove parts of bottom benthic organisms, may cause damages to, or disrupt the operations of existing facilities or structures (such

[28] For example, see: “*State of Gender Equality and Climate Change in Viet Nam*” (2021), carried out with the financial support of “EmPower – Women for Climate Resilient Societies”: the UN Environment Programme, UN Women, the Swedish International Development Cooperation Agency (SIDA).

as canal-crossing bridges and powerlines, or canal- side houses which are located very closely to waterfronts at some locations, disturb and/or cause safety risks to waterway transportation, local fishing, or water supply . These negative potential impacts and risks of dredging are expected mostly short to medium term, and reversible. On the other hand, there are opportunities of beneficial use of dredged materials for ground levelling at low-laying locations, the demands in the MDR is very high. The upgradation of hundred kilometers of embankments requires significant volumes of raw materials for filling. If materials are exploited locally, vehicles and construction plants operations and the pits created may cause health and safety risks for local people. If purchased from suppliers, the project?s large demands of materials could contribute and aggravate the issues related to scarcity/shortages of raw construction materials (rock/stone, sand and soil as filling materials) in the MDR. As the project covers both dredging and embankment fillings, there are good opportunities for promoting internal project coordination to make use of dredged materials at the embankments to be upgraded in the proposed project or community?s use in the surrounding project locations provided that the quality of sediments is confirmed to be suitable. Hydraulic models are needed for assessing the possible changes in hydrological regimes, especially water levels and flow rates, in the intervened rivers and canals systems, evaluating whether there would be increased flooding and/or erosion risks in some specific areas/sections. There are also potential risks and impacts to be identified and considered during the preparation of the plans (dredging, sediment management). The Project environmental risk is rated substantial, taking into account the project's contribution only to meet estimated 1-1.5% of the overall investments demand under the MDRMP.

The social risk is categorized as "Substantial". The main social risks stem from: (i) the acquisition of land and non-land assets due to the physical investments (e.g. sluice gates, sea dykes, canal rehabilitations/upgrades, upgrading and modernizing water resources management infrastructure, roads etc.), which may be complicated further due to the presence of some of the affected households that would be considered as encroachers under the national regulations (who may also be members of vulnerable groups); (ii) the presence of ethnic minority people (mainly Khmer) in the project area, representing just over 30 percent of the total population in Tra Vinh and Soc Trang provinces; (iii) the need to develop mechanisms to support farmers to transition to the new proposed livelihood adaptation models; (iv) the resistance/non-readiness or transitional risks of some groups in changing their livelihood models, especially the most vulnerable groups (i.e. elderly, ethnic minority households, poor and landless or land poor households); and (v) temporary construction-induced impacts due to the disturbance to public service utilities, access restrictions for people in residential areas, or sensitive establishments along the roads like schools, offices, markets, etc. Besides, a relatively large number of contract workers from other provinces will be mobilized by contractors to the project sites during the construction period. This may result in potential social impacts and risks to local communities and stakeholders: sexual exploitation and abuse (SEA) and sexual harassment (SH) related to labor influx and infection of COVID-19 and other communicable diseases.

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