Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam

Part I: Project Information

Name of Parent Program
Food Systems, Land Use and Restoration (FOLUR) Impact Program

GEF ID
10245

Project Type
FSP

Type of Trust Fund
GET

CBIT/NGI
☐CBIT
☐NGI

Project Title
Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam

Countries
Viet Nam

Agency(ies)
FAO

Other Executing Partner(s)
Ministry of Natural Resources and Environment (MoNRE), Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD)

Executing Partner Type
Government

GEF Focal Area
Multi Focal Area

Taxonomy

Deforestation-free Sourcing, Food Systems, Land Use and Restoration, Integrated Programs, Focal Areas, Land Degradation, Food Security, Land Degradation Neutrality, Land Productivity, Carbon stocks above or below ground, Land Cover and Land cover change, Sustainable Land Management, Biodiversity, Mainstreaming, Ceritification - International Standards, Agriculture and agrobiodiversity, Species, Threatened Species, Climate Change, Climate Change Mitigation, Agriculture, Forestry, and Other Land Use, Sustainable Development Goals, Influencing models, Strengthen institutional capacity and decision-making, Demonstrate innovative approache, Stakeholders, Type of Engagement, Information Dissemination, Partnership, Communications, Behavior change, Awareness Raising, Public Campaigns, Private Sector, SMEs, Civil Society, Non-Governmental Organization, Community Based Organization, Beneficiaries, Local Communities, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Women groups, Sex-disaggregated indicators, Gender results areas, Capacity Development, Sustainable Food Systems, Smallholder Farming, Sustainable Commodity Production, Comprehensive Land Use Planning, Landscape Restoration, Integrated Landscapes, Food Value Chains, Capacity, Knowledge and Research, Learning, Adaptive management, Indicators to measure change, Theory of change, Innovation

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 1

Climate Change Adaptation

Climate Change Adaptation 0

Submission Date

6/18/2019

Expected Implementation Start

7/1/2021

Expected Completion Date

6/30/2026

Duration

60In Months

Agency Fee($)

481,913.00

A. FOCAL/NON-FOCAL AREA ELEMENTS

Objectives/Programs	Focal Area Outcomes	Trust Fund	GEF Amount($)	Co-Fin Amount($)
IP FOLU	Transformation of food systems through sustainable production, reduced deforestation from commodity supply chains, and increased landscape restoration.	GET	5,354,587.00	77,950,000.00
		Total Project Cost($)	**5,354,587.00**	**77,950,000.00**

B. Project description summary

Project Objective

To support the transformation of rice-dominated landscapes in the Mekong Delta towards sustainable, adaptive and resilient models of production and landscape management that deliver multiple environmental and social benefits

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 1. Enabling environment for integrated rice-landscape management (ILM)	Technical Assistance	1.1 Strengthened planning, governance and regulatory frameworks for integrated landscape management *60% of men and women in Government, farmer organisations and community representatives consider landscape management issues prioritised by them to be satisfactorily addressed* 1.2 Policy and regulatory commitments to sustainable management of the Mekong Delta are consolidated, coordinated and institutionalized *5 provincial Governments have specific commitments for continuing inter-provincial coordination in administrative procedures, regulations*	1.1.1 Multi-stakeholder socially-inclusive platform established for dialogue on governance and planning responses to landscape-wide issues in relation to the implementation of Resolution 120 1.1.2 Provincial Master Plans formulated and applied based on Strategic Environmental Assessments (SEA) that take into account sustainability considerations, global environmental benefits (GEBs), landscape dynamics and results of multi-stakeholder dialogue 1.2.1 Evidence-based guidance for policy-makers in Central Government to raise awareness regarding the national/sector benefits of integrated approaches 1.2.2 Environmental sustainability criteria with ILM perspectives included in systems for provincial	GET	1,690,560.00	5,209,274.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 2. Promotion of sustainable food production practices & responsible gender-sensitive commodity value chains that contribute to ILM and GEBs	Investment	2.1: Producers (women and men) have reliable access to technical and financial support and productive resources to adopt agricultural practices and natural resource management that contributes to ILM and secures GEBs *15,000 farmers (of whom at least 10% are ethnic minorities and 30% are women) able to access the technical and financial support they need to adopt agricultural practices and natural resource management that contributes to ILM and GEBs* *1,650,000 ha of land under improved management, leading to <u>reductions</u> in: pesticide contaminatio n in ricefield systems, eutrophicatio*	2.1.1 Strengthened public and private gender-responsive extension mechanisms supporting GEBs and ILM 2.1.2. Farmer-based organizations with capacities to obtain and manage productive inputs needed to produce sustainably 2.1.3 Financing services available to farmers as a result of project facilitation 2.2.1 Networks of public/private value chain actors supporting value chain leverage of environmental sustainability 2.2.2 Value chains are established/operating that provide incentives and support to farmers to manage rice landscapes and production systems in accordance with environmental sustainability and GEBs 2.2.3 Value chain sustainability standards applied, improved and validated in order to address ILM and location-specific GEB	GET	1,321,300.00	63,635,780.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 3. Conservation, management and restoration in forests, wetlands and farming systems to favour ecosystem services	Investment	3.1 Conservation, management and restoration practices in forests, wetlands and farming systems contribute to the generation of ecosystem services and are sustainably and equitably financed. *151,200 ha are proposed for restoration in such a way as to restore ecological functions and environmental services (e.g. hydrological flows and groundwater recharge, nutrient inputs), with management planning instruments in place together with provisions for governance and financial sustainability*	3.1.1 Management plans for key landscape zones of priority for biodiversity and ecosystem services 3.1.2 Investments in restoration of priority areas in terms of BD and ecosystem services 3.1.3 Functioning incentive/PES mechanisms tailored to optimize flows of ecosystem services	GET	1,518,740.00	4,735,703.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
Component 4. Knowledge Management and M&E	Technical Assistance	4.1: Project implementation is based on RBM and responds effectively and adaptively to the results of monitoring *100% of targets set out in annual work plans and budgets are based on the results of M&E*	4.1.1: Project monitoring and evaluation plan and system developed and implemented 4.1.2: System for adaptive results-based management of the project	GET	529,212.00	78,023.00
		4.2: Coordination and knowledge exchange at national and global levels enable the project to contribute effectively to programmatic efforts to further sustainability in food systems and landscape management *Every 3 months, knowledge is exchanged and coordination reviewed with national and global actors within the framework of the FOLUR global platform*	4.2.1: Knowledge management, learning and communication strategies are developed and implemented 4.2.2: Mechanisms are developed and applied to coordinate the project with global, regional and transboundary efforts under the FOLUR IP			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing($)	Confirmed Co-Financing($)
				Sub Total ($)	**5,059,812.00**	**73,658,780.00**
Project Management Cost (PMC)						
				GET	294,775.00	4,291,220.00
				Sub Total($)	**294,775.00**	**4,291,220.00**
				Total Project Cost($)	**5,354,587.00**	**77,950,000.00**

Please provide justification

With the inclusion of two positions (Admin Assistant and Finance Manager) and office rent & utilities under PMC, PMC is now slightly higher than 5% (namely, 5.8% of sub-total). After analysis and discussion, Government has committed to co-financing most of the costs of office rental, but is not able to cover these staff costs, which are essential to ensure the proper functioning of the project.

C. Sources of Co-financing for the Project by name and by type

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Investment Mobilized	Amount($)
Private Sector	Olam International Limited	Grant	Investment mobilized	25,000,000.00
Private Sector	PAN	Grant	Investment mobilized	20,000,000.00
Donor Agency	IUCN	Grant	Investment mobilized	2,000,000.00
Private Sector	Loc Troi	Grant	Investment mobilized	3,000,000.00
Donor Agency	World Bank (through MONRE)	Loans	Investment mobilized	10,000,000.00
Recipient Country Government	MARD	Public Investment	Investment mobilized	4,500,000.00
GEF Agency	FAO	Grant	Investment mobilized	300,000.00
GEF Agency	FAO	In-kind	Recurrent expenditures	100,000.00
Donor Agency	GIZ	In-kind	Recurrent expenditures	7,000,000.00
Recipient Country Government	MONRE	In-kind	Recurrent expenditures	550,000.00
Donor Agency	UNDP (through MARD)	Grant	Investment mobilized	1,500,000.00
Donor Agency	EU (through MARD)	Grant	Investment mobilized	4,000,000.00
			Total Co-Financing($)	**77,950,000.00**

Describe how any "Investment Mobilized" was identified

Describe how any ?Investment Mobilized? was identified. - Olam co-financing represents the costs of committing to supporting, and preferentially sourcing from, selected farmers who comply with

sustainability standards, and its collaboration with GIZ on the GIZ-BRIA II/Market-oriented Smallholder Value Chains Project (MSVC). - PAN and Loc Troi co-financing represents the costs of supporting and scaling up sustainable rice production models by developing raw material areas according to sustainable criteria and prioritizing the purchase of rice from farmers or cooperatives that apply sustainable farming models. - IUCN cofinancing consists of its support to piloting and scaling up of flood-friendly livelihoods in the deep flooded area of the upper delta, and to addressing the ?coastal squeeze? in high-vulnerability coastal provinces through the application of nature-based solutions including mangrove protection and restoration, mangrove-shrimp polyculture and recirculating aquaculture systems. - MONRE co-financing consists of its investment in the Project ?Climate Change and Green Growth Policy Development 2 (DPF2)? (2020 - 2025) that aims to support the development and implementation of strategies, policies, prioritized programs and projects to reduce negative impacts of climate change in Vietnam and contribute the implementation of the Paris Agreement to 2030; the Project ?Improved Land Governance and Database (VILG)? (2016-2022) that aims to improve the efficiency and transparency of land administration services in 33 provinces (of which An Giang and Tra Vinh are overlapped with the target provinces of the GEF FOLUR project); and its provision of staff to supervise and support project implementation and technical facilities including the use of the Mekong Delta Centre, which is currently in process of establishment, as a mechanism to share reliable information for negotiation, planning and decision-making processes in the Delta. - MARD co-financing consists of the projects ?Accelerating Private Sector Engagement in Climate Resilient and Low Emission Investment Opportunities in Vietnam?s NDC? (UNDP, USD 1.5 million in co-financing); ?Smart Agro-ecological Transformation of Farming Systems towards Resilience and Sustainability in the Middle and Coastal Zones of the Mekong Delta? (EU, USD 4 million in co-financing); ?Green Innovation Enhancement in the Agriculture and Food Sector in the Mekong Delta, Viet Nam?; and the implementation of the Master Programme for sustainable and climate-resilient agricultural development in Mekong Delta region towards 2030 with a vision to 2045 (Public investment, USD 4.5 million in co-financing), including pilot activities for climate resilience models in the Mekong Delta region; a scheme to attract investments in sustainable rice production and value chains; and provision of livelihood support to farmers to change cropping systems. - FAO co-financing consists of the Technical Cooperation Programme (TCP) entitled ?Support for development of modern business cooperatives for small farmers?, which will generate a tested training package for farmer cooperatives which will be directly transferable for application by the cooperatives participating in the GEF-7 project; the TCP entitled ?Pilot project on organic farming systems development and agro-ecotourism for small farmers communities?, which will function as a source of knowledge and experiences on organic farming and agro-ecotourism which will be fed directly into the GEF-7 project for application by its participating farmers and communities; the TCP entitled ?Support for development of National Strategy and Action Plan for Integrated Plant Health Management ? which will support the Government in updating training materials which will be piloted within the area of the GEF-7 project, thereby contributing directly to its aims of promoting IPM and agroecology; dedication of staff time to operational support, monitoring and reporting of the project. - GIZ co-financing consists of support to the establishment of Green Innovation Centres in Vietnam, with a focus on promoting innovations (including ICT and digitalization) along the rice value chain, as well as value-adding process; and its funding of the Better Rice Asia Initiative (BRIA II)/Market-Oriented Smallholder Value Chains Project (MSVC), the public-private partnership approach of which will

create a pulling effect in farmer adoption of sustainable practices and technology as well as better organisation and management of farmer groups, which is fundamental for long-term sustainability in product value chains.

D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
FAO	GET	Viet Nam	Land Degradation	LD STAR Allocation	1,240,479	111,643
FAO	GET	Viet Nam	Biodiversity	BD STAR Allocation	1,338,647	120,478
FAO	GET	Viet Nam	Climate Change	CC STAR Allocation	990,599	89,154
FAO	GET	Viet Nam	Multi Focal Area	IP FOLU Set-Aside	1,784,862	160,638
				Total Grant Resources($)	**5,354,587.00**	**481,913.00**

E. Non Grant Instrument

NON-GRANT INSTRUMENT at CEO Endorsement

Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)

PPG Required

☐

PPG Amount ($)

150,000

PPG Agency Fee ($)

13,500

Agency	Trust Fund	Country	Focal Area	Programming of Funds	Amount($)	Fee($)
FAO	GET	Viet Nam	Land Degradation	LD STAR Allocation	34,750	3,127
FAO	GET	Viet Nam	Biodiversity	BD STAR Allocation	37,500	3,375
FAO	GET	Viet Nam	Climate Change	CC STAR Allocation	27,750	2,498
FAO	GET	Viet Nam	Multi Focal Area	IP FOLU Set-Aside	50,000	4,500
				Total Project Costs($)	**150,000.00**	**13,500.00**

Core Indicators

Indicator 3 Area of land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	151200.00	0.00	0.00

Indicator 3.1 Area of degraded agricultural land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	120,000.00		

Indicator 3.2 Area of Forest and Forest Land restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	1,200.00		

Indicator 3.3 Area of natural grass and shrublands restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Indicator 3.4 Area of wetlands (incl. estuaries, mangroves) restored

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	30,000.00		

Indicator 4 Area of landscapes under improved practices (hectares; excluding protected areas)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
0.00	1650000.00	0.00	0.00

Indicator 4.1 Area of landscapes under improved management to benefit biodiversity (hectares, qualitative assessment, non-certified)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	549,500.00		

Indicator 4.2 Area of landscapes that meets national or international third party certification that incorporates biodiversity considerations (hectares)

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	1,500.00		

Type/Name of Third Party Certification

SRP Standard

Indicator 4.3 Area of landscapes under sustainable land management in production systems

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)
	1,099,000.00		

Indicator 4.4 Area of High Conservation Value Forest (HCVF) loss avoided

Ha (Expected at PIF)	Ha (Expected at CEO Endorsement)	Ha (Achieved at MTR)	Ha (Achieved at TE)

Documents (Please upload document(s) that justifies the HCVF)

Title	Submitted

Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)	0	7733981	0	0
Expected metric tons of CO?e (indirect)	0	5155988	0	0

Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)		7,733,981		
Expected metric tons of CO?e (indirect)		5,155,988		
Anticipated start year of accounting		2021		
Duration of accounting		20		

Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO?e (direct)				
Expected metric tons of CO?e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)				

Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)

Indicator 11 Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
Female		15,000		
Male		15,000		
Total	0	30000	0	0

Part II. Project Justification

1a. Project Description

1. This project, under the Food Systems, Land Use and Restoration (FOLUR) Impact Program, will target the Mekong Delta of Vietnam, given the magnitude of the area?s rice production as a proportion of global supply (see details on rice production in Vietnam and the MDR in Annex I of the ProDoc), and the environmental unsustainability of the area?s rice production systems (see threat description in paragraphs (69-109).

2. This project will work directly in five provinces of the Mekong Delta Region: An Giang, Dong Thap, Vinh Long, Soc Trang and Tra Vinh (see Figure 2). The justification for the selection of these provinces, and the proposed criteria for the selection of the target communities within them are presented in Part II.

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description).

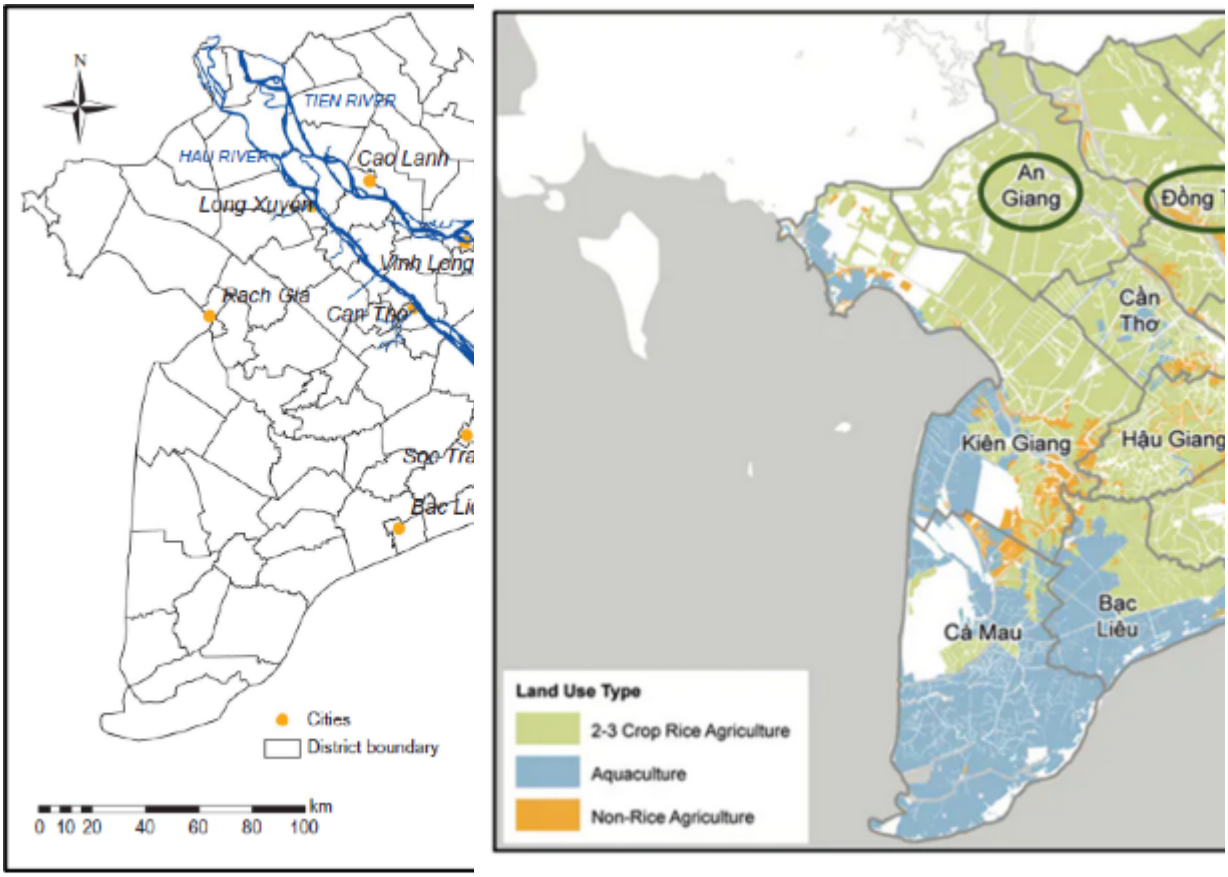
Context

The Mekong Delta

3. The Mekong Delta, a vast triangular plain covering around 55,000 km2 and fed by the nine distributary channels of the Mekong and Brassac rivers, stretches for about 270 km from Phnom Penh in Cambodia to the East Sea and Gulf of Thailand (Figure 1), and is home to 17 milllion people.

4. Its width near the coast is some 350 km, and the coastline has a length of about 600 km. Approximately 16,000 km2 of the inner delta lies within Cambodia; the remaining 39,000 km2 constitute the southern tip of Vietnam.[1] Administratively, the Vietnamese portion of the Mekong Delta coincides with the Mekong River Delta (or South-Western) Region (MDR) and has a total area of 40,576 km2. The delta is divided into 12 provinces and one municipality, Can Tho.

Figure 1.Location of the Mekong Delta **Figure 2.Present-day land use in the Mekong Delta**



5. The Mekong River discharges into the East Sea through a network of canals and branches, and also into the Gulf of Thailand. The delta is very flat: its average elevation is about 0.8 m above mean sea level. Around 50% of the Delta is seasonally flooded up to 3 m in depth, mainly in the Plain of Reeds (PoR) and the Long Xuy?n Quadrangle (LXQ). Low river flows in the dry season cause salt water intrusion in coastal regions, affecting over 1.4 million ha. The coastline traverses rice and aquaculture production areas, mangroves, wetlands and other low lying areas. Today, almost the entire surface area of the region has been converted to agriculture (predominantly rice-based) and aquaculture (Figure 2). The coastal water around the Mekong Delta, known as the Mekong Plume, receive Mekong outflows and influence the hydrology of the delta through tidal effects. It is estimated that out of the 160 Mt (million tons) per year of the Mekong sediment load, about 100 Mt and 16,000 tons of attached nutrients reach the coastal plume annually, not including the sand load. The freshwater outflows impact salinity levels, suspended sediments and nutrients, and sand loads reaching the coastal waters, thus playing a vital part in the geo-morphological formation of the delta, maintaining and advancing the coastline, and supporting the productivity of the coastal fisheries.

Biodiversity values[2]

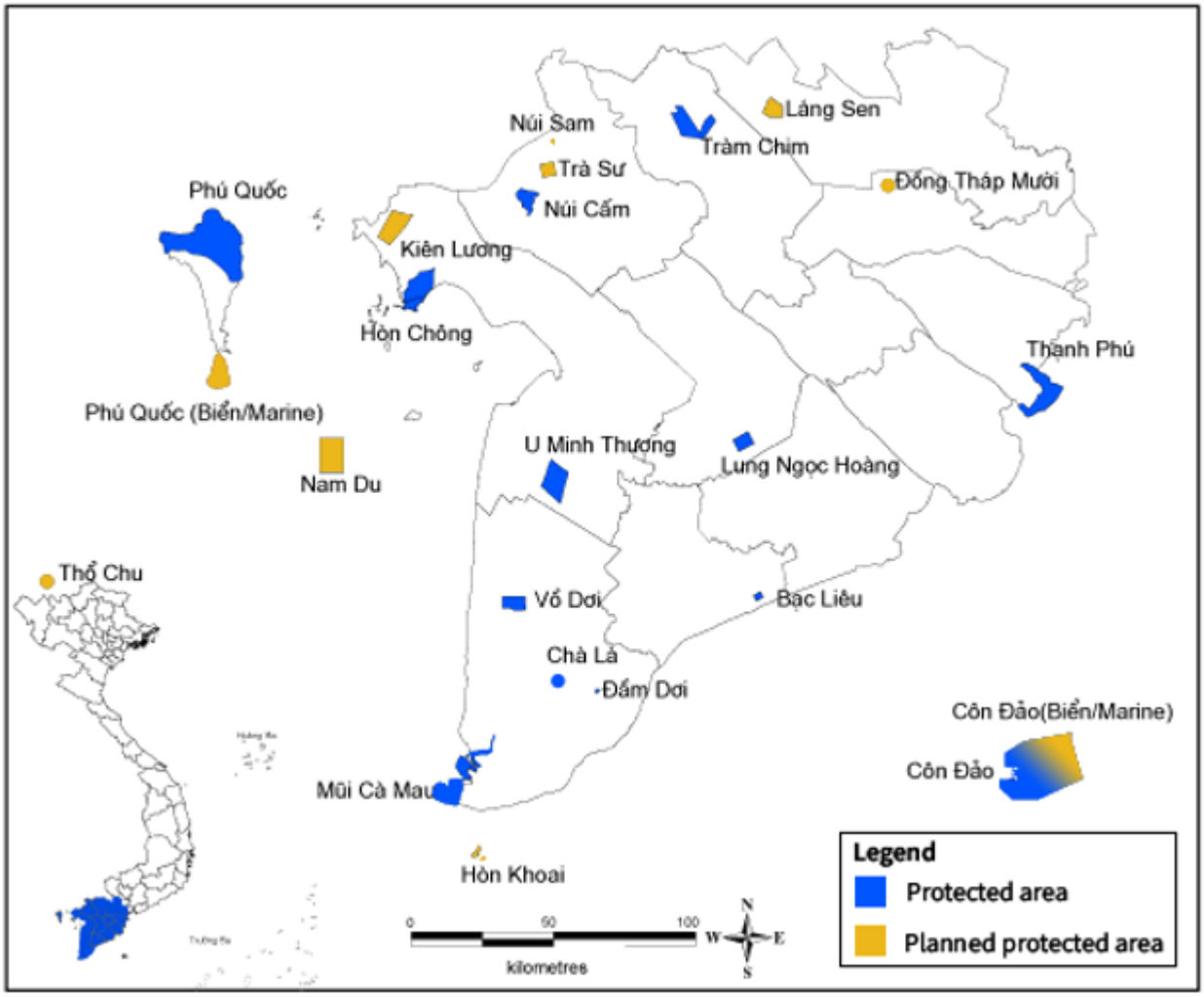
6. The original natural ecosystems that once dominated the Delta were peat swamp forests, freshwater swamp forest and, closer to the coast, mangroves (Figure 3). As shown in Figure 2, almost the entire surface area of the region has now been converted to agriculture (predominantly rice-based) and aquaculture.

Figure 3. Bioregions represented in the target provinces

7. Despite the scale of the elimination of the original vegetation, the region still supports a diverse biota. Only two mammals of conservation significance, the Hairy-nosed Otter (*Lutra sumatrana*)[3] and the Dugong (*Dugong dugon*)[4], remain in the Delta, but there are at least 37 species of birds of conservation significance, and 470 species of fish have been recorded, of which 28 are endemic to the Mekong and 4 are known only from the delta. The delta also contains a number of distinct vegetation communities, although most are now reduced to small remnants.

8. There are a number of existing and proposed protected areas in the MDR: although small and scattered, these play an extremely important role in maintaining biodiversity and regulating ecosystem services.

Figure 4.Existing and planned protected areas in the Mekong Delta[5]



9. The only protected area in the five provinces specifically targeted by the project is Tram Chim National Park (7,313 ha): this preserves the largest remnant of the Plain of Reeds (PoR), a freshwater floodplain that once covered approximately 1 million hectares of the Mekong Delta in Cambodia and Vietnam. The wetlands of Tram Chim provide food, spawning grounds, nursery and migration paths on which fish stocks, within and outside the wetlands, depend. In 2006, 62 species of fish and 7 species of crustacean were moving into the park at one of the upstream water gates, while 41 different fish species were moving out of the downstream gate. Of the 130 fish species identified in Tram Chim, 5 species are globally threatened and 20 species are ranked as high or very high vulnerability in the FishBase 2004[6]. For people living in the buffer zone, fish from Tram Chim are an extremely important natural, livelihood and community resource. Local people also harvest turtles, snakes, birds, Melaleuca for fuel wood, and some aquatic plants such as lotus and water lilies for food. Wetland plants, such as *Panicum repens* and *Eleocharis dulcis,* are an important source of mulching material for local vegetable gardeners. Tram Chim has recently become a popular destination for domestic tourism, receiving 20,000 visitors a year.

Box 1. Biodiversity values of Tram Chim National Park

The vegetation of Tram Chim National Park comprises a mixture of seasonally inundated grassland, regenerating Melaleuca forest and open swamp. Melaleuca is distributed throughout the national park, both in plantations and in scattered patches in areas of grassland or open swamp. There are five widespread grassland communities at Tram Chim, of which the community dominated by *Eleocharis dulcis* and wild rice (*Oryza rufipogon*) is of the highest conservation significance. Tram Chim is one of the few places in the Plain of Reeds where this community is likely to survive to any extent, and, therefore, one of the most important sites for the conservation of wild rice in Vietnam. The other grassland communities are dominated by *E. ochrostachys, Panicum repens, Ischaemum rugosum* and *Vossia cuspidata*. Another vegetation type found at Tram Chim is lotus swamp, which is dominated by lotus (*Nelumbo nucifera)*, along with *Nymphaea nouchali, N. pubescens* and *N. tetragona.*.

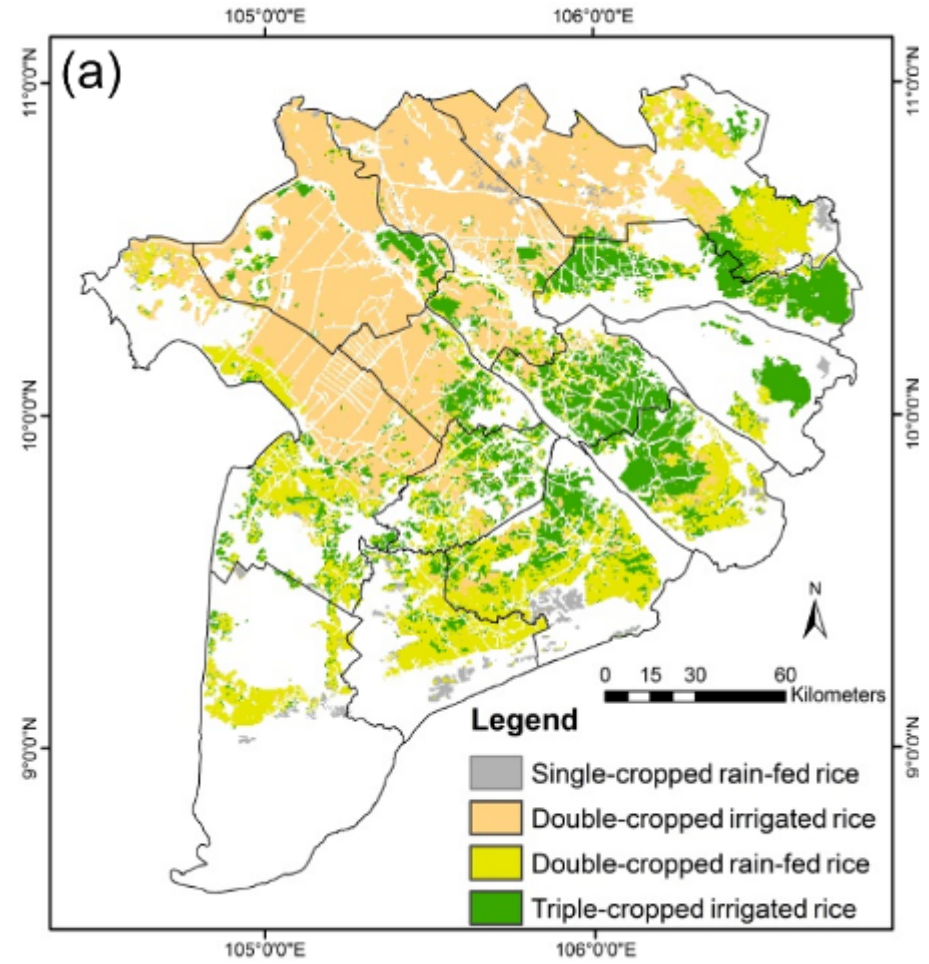
The site supports significant numbers of waterbirds, particularly during the winter months. Of particular importance is the non-breeding population of the eastern subspecies of Sarus Crane (*Grus antigone sharpii*), which regularly spends the dry season at the national park. Between 1989 and 1999, the maximum dry-season count of Sarus Cranes at Tram Chim ranged from 187 to 814 individuals, with a mean of 496 (BirdLife International 2001). In 2001, however, crane numbers had dropped to around 50, while there had been a proportional increase in the number of birds at Kien Luong proposed nature reserve to the south-west. It is hypothesised that the decrease in the Sarus Crane population at Tram Chim occurred not as a result of mortality but because birds that normally spent the dry season at Tram Chim spent the dry seasons of 2001 and 2002 at Kien Luong. Despite this decline, Tram Chim is still one of the most important sites for Sarus cranes in the Mekong Delta (Van Zalinge et al.2011).

In addition to Sarus Crane, the globally endangered Bengal Florican (*Houbaropsis bengalensis)* has also been recorded at Tram Chim National Park. The status of this secretive grassland specialist at Tram Chim is not fully known but it is likely that birds vacate the area during periods of substantial inundation in the late wet season. A number of other globally threatened and near-threatened bird species regularly occur at Tram Chim, including Oriental Darter (*Anhinga melanogaster*), Lesser Adjutant (*Leptoptilos javanicus)*, Painted Stork (*Mycteria leucocephala*) and Asian Golden Weaver (*Ploceus hypoxanthus,* Tordoff 2002). Other wetland bird species of note recorded include Cotton Pygmy Goose (*Nettapus coromandelianus*), Greater Painted-snipe (*Rostratula benghalensis*) and Pheasant-tailed Jacana (*Hydrophasianus chirurgus,* Buckton et al. 1999). Because of its importance for globally threatened and congregatory bird species, Tram Chim qualifies as an Important Bird Area (Tordoff 2002).

Rice production systems in the Mekong Delta landscape

10. Rice production dominates land use and natural resource management in the Mekong Delta (Figure 5). Understanding and influencing the management of rice-based farming and landscape systems must therefore be central entry points for interventions aimed at generating environmental benefits, delivering integrated social and environmental sustainability, and ensuring sustainable food systems in this globally important rice production area.

Figure 5.Rice cropping systems in the Mekong Delta in 2001 (a) and 2012 (j)[7]


(a)
105°0'0"E
106°0'0"E
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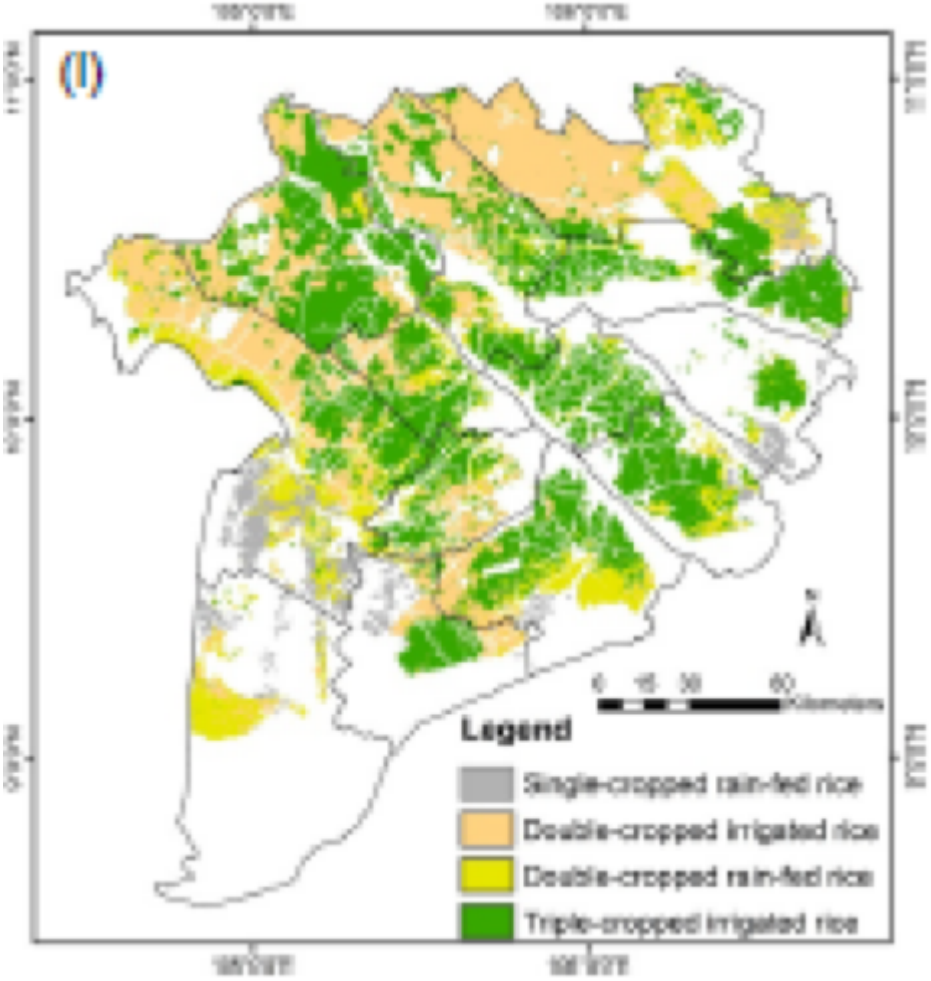
Double-cropped irrigated rice
Double-cropped rain-fed rice
Triple-cropped irrigated rice


(l)
Legend
Single-cropped rain-fed rice
Double-cropped irrigated rice
Double-cropped rain-fed rice
Triple-cropped irrigated rice

11. The diversity of rice cropping patterns in the MDR (Table 1) is driven by the availability of water supply, crop management practices, flood occurrence in Summer-Autumn and saline intrusion influence in Winter-Spring, leading to a variety of land cover patterns across the region. A large proportion of the rice production area, especially in the central part of the delta, is grown with three crops per year, and this intensive ?triple-cropped? area increased significantly between 2001 and 2012.

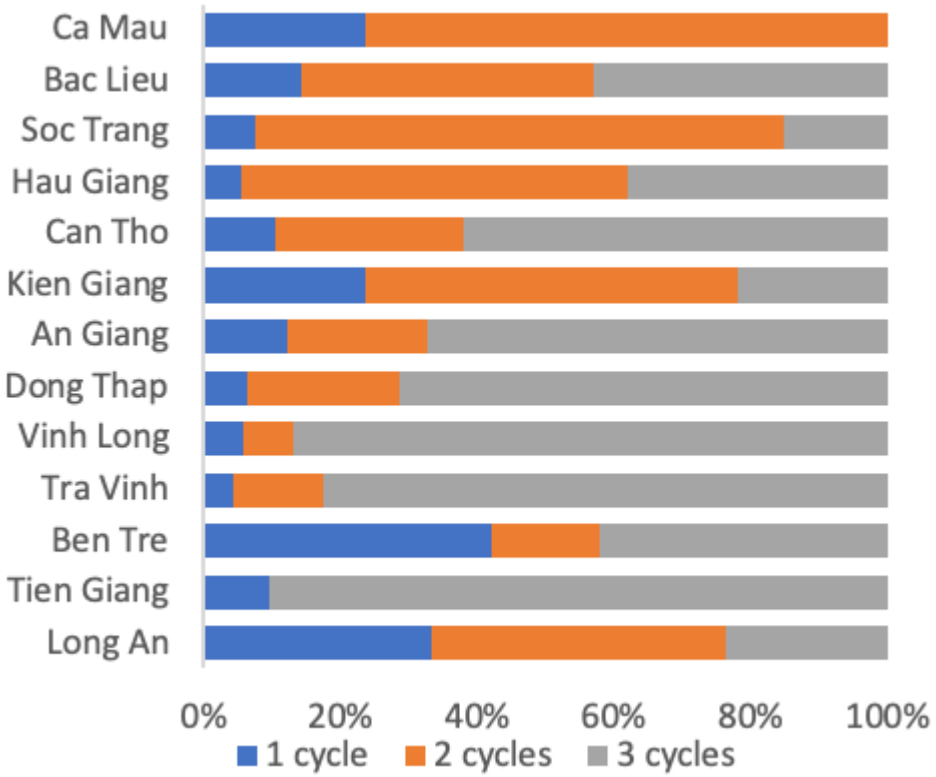
Table 1. Summary of rice production systems[8]

Practice name	Location and areas	Water use and discharge	Soils
3x rice, no flooding: rice monoculture, usually short growing period rice (90 days)	Central delta and part of An Giang upper delta Est 15% of total rice area Total rice area 800,000 ha in project provinces[9]	Irrigated*. usually high dyke construction. Controlled flooding (1 month every 2 years) or no flooding, in about 36% of the rice area	Mainly Thionic (with sulphides and a very low pH) and Umbric (base-desaturated surface, rich in organic matter) gleysols. Some acidity and salinit.:
3x rice, uncontrolled flooding: rice monoculture, both short growing period rice (extended natural flooding) or longer growing period when shorter flood period	Mainly central delta Estimated 28% of total rice area Total rice area 800,000 ha in project provinces	Irrigated*.	Some acidity. Manual seeding, wet ploughing and harrowing. Mainly Thionic and Umbric gleysols.
2x rice: Rice, short duration but also longer duration varieties, for example jasmine rice (longer duration) or salt-tolerant varieties	Mainly upper delta and saline intruded lower delta (North-West)[i] Est.57% of total rice area Total rice area 800,000 ha in project provinces	Irrigated*. Uncontrolled, natural flooding for extended periods of time (60%) or short time periods (40%). Usually lower dyke construction	Mainly Thionic and Umbric gleysols, with some haplic (typical) acrisols near the river. Salinity and acidity in some soils.

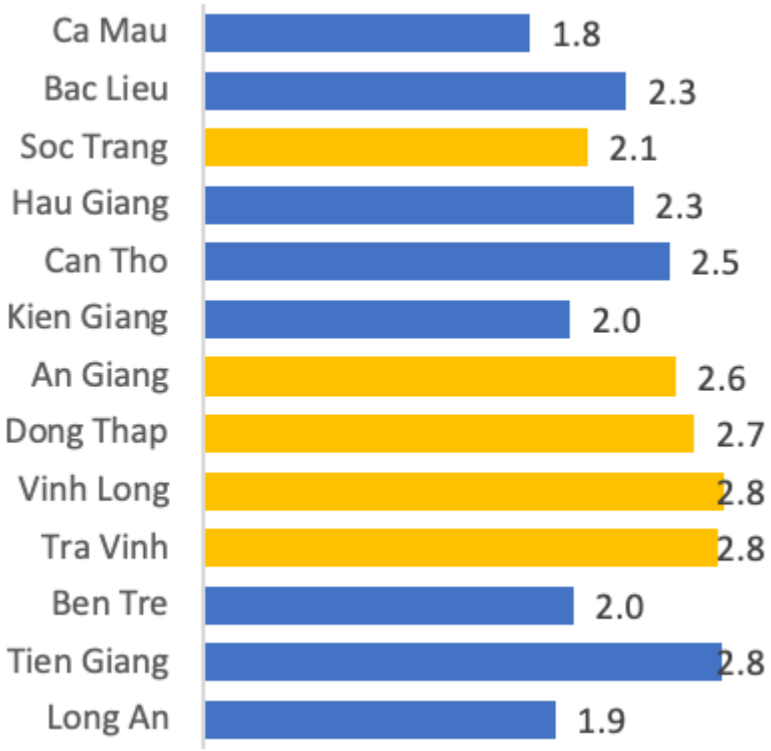
12. A variety of flooding conditions also exists: areas that are extensively flooded for long periods only have two rice crops per year, while classes that are located in controlled flooding areas, and that are only flooded for a short period, often have three crops. The flood regime affects the farmers? choices of which rice varieties to grow: to sustain the triple-cropping pattern in controlled flooding areas, farmers tend to choose varieties with shorter growing periods (around 90 days), whereas in uncontrolled flooding areas, they prefer longer duration rice varieties[10].

Figure 6.Number of rice production cycles per year (2016)[11]

% of farmers in MDR provinces by numbers of cropping cycles



Average number of paddy cycles per year, by province



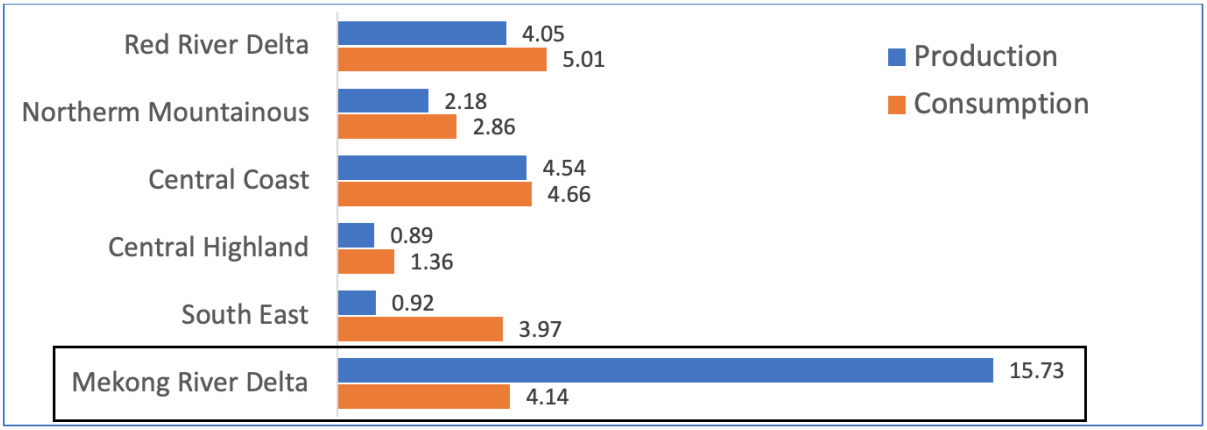
13. *The dynamics of the rice sector and value chains in turn determine the scale and nature of production and management practices in rice-based farming systems and landscapes in the MDR.* ***The rice sector and value chains as determinants of production dynamics***

14. This is also of global significance, given the scale of rice production in the MDR and the country as a whole; specifically:

- **Vietnam is the world?s fourth largest rice producer** (in 2018, its total rice cultivation area was 7.57 million ha and its total paddy production was 44.0 Mt, a 3% increase over 2017); and

- **The Mekong Delta (MDR) is the largest paddy-producing region in the country**, accounting for 55.6% of total production, and, significantly, 95% of its exported rice. It is the only region in the country with a rice surplus (see Figure 7).

Figure 7.Rice production and consumption by regions, 2018[12]



15. The fact that **a large proportion of the rice from the MDR is exported (39%** in 2018[13]), opens up significant opportunities for interacting with global value chain actors to generate leverage of environmental benefits, to the benefit of farmers.

16. The government has recently introduced measures to provide **incentives for businesses to export high-quality and organic rice**, including exemption from some regulatory requirements (for example in relation to storage and processing facilities, or storage reserves), and the provision of subsidies (for example to support with the cost of new technology and applying for certification).

17. In more recent years, however, **the role of rice as a main engine for rural growth and poverty reduction has subsided**; increases in producer paddy prices have been outpaced by rising input costs, including those for fertilizer, fuel, and labour. Today, many MDR rice growers are net buyers of rice, and farm households with very small landholdings are no longer able to advance their standard of living by making incremental productivity gains in rice mono-cropping, relying increasingly on off-farm sources of income and employment.

18. **The area under rice cultivation has fallen** (by 5.5% between 2013 and 2019), **and is expected to continue to do so** under the Government?s rice restructuring programme. Despite this, a 7% increase in productivity means that total production has remained almost stable.

19. **The country?s rice sector is also dealing with severe environmental issues** (see description of threats below for more detail). Strategies for increased production have mainly focused on intensified rice farming systems, using high-yielding varieties and large volumes of agrochemicals: the use of pesticides has increased drastically over the past few decades, while the overuse of fertilizers has led to high pest and disease infestations, resulting in turn in even higher usage of pesticides. Rice production is a significant contributor to the country?s greenhouse gas emissions, in addition to its impact on water and soil quality. Furthermore, in the Mekong Delta rice residues are normally burnt (by 98% of farmers after the winter/spring season and 54% after the autumn/winter season), leading to major impacts on air quality.

Fruit and vegetable production:

20. Fruit and vegetables are among the most prominent diversification options open to farmers in the Mekong Delta, as alternatives to intensive rice production. The project will not

directly promote fruit and vegetable production, but its support will help to ensure that such diversification occurs in the most environmentally sustainable way possible.

21. Between 2010 and 2016, the total fruit area of the MDR increased by 53%, to around 350,000 ha: the south of Viet Nam accounts for 67% of national fruit production[18][1] and 40% of the national area.[19][2]. The major fruits include mango, banana, dragonfruit, durian, grapefruit, orange, longan, pineapple, lame and rambutan[20][3]. In recent years, **fruit prices have fallen due to oversupply**. They have been sold mostly fresh into the domestic market, with **limited success in processing and value addition**. A range of ***other agricultural crops*** are grown in the Delta. These vary from province to province, and include maize (baby corn) and red onion.

22. Fruit growers face a number of challenges, including c**limate (**hoarfrost and drought), l**ack of water for irrigation** due to saline water intrusion and drought; **inadequate cultivation and disease management** processes; **weak value chain development and standard compliance; inadequate postharvest, packaging and distribution handling;** and **limited development of market diversity**, making the sector vulnerable to market disruption or oversupply.

23. The Europe/Vietnam Free Trade Agreement has however opened opportunities for exporting fruits and vegetables to the EU. Current levels of exports to the US, EU and ASEAN countries (such as Japan and South Korea) show that the fruit sector has high potential to meet sanitary and phytosanitary requirements from demanding markets.

Other productive elements in the MDR landscape

24. Despite the historical dominance of rice in the MDR, there are numerous other crops and production sectors that also influence the dynamics of the area?s natural resources, farming systems and socioeconomic conditions. **Although the project will not work directly with these other elements, in order for landscape management to be truly integrated and sustainable they must also be taken into account in sector and landscape planning,** including consideration of the flows of environmental processes and impacts among them (explored in more detail in the threats description below).

25. ***Pangasius aquaculture:*** Viet Nam is both the largest global producer and exporter of pangasius fish, and continues to drive global output growth[14]. In 2019, total production was around 1.4 Mt, an increase of around 3.5% over 2018[15]. **The pangasius sector has shown recent instability, however:** spiking farm-gate prices in 2018 and good availability of cheap fingerlings were powerful catalysts driving aquaculture development along the Mekong Delta in 2019, despite excess inventories reported in the USA and European Union, but towards the end of 2019 the price situation had worsened significantly - the export value in the first 11 months of 2019 was down 11% compared to the previous year, with nine straight months of decline[16][17].

26. ***Shrimp aquaculture***: this is primarily carried out in lagoons located along the coastline, and has evolved over the last 50 years from extensive systems based on local shrimp, crab and fish species, marketed locally, to shrimp hatcheries producing postlarvae from wild caught broodstock (mostly of the Black Tiger Shrimp *Penaeus monodon*) to semi-intensive and intensive culture systems. The intensification of shrimp production has accelerated since the year 2000, particularly in brackish water areas, where mangrove forests fulfil important ecological functions. The development has been driven by the high value and profit of shrimp production compared with those of rice. Coastal shrimp aquaculture has had **significant impacts on mangroves** and is also **strongly affected by climate change and changes in the freshwater hydrology** of the Delta.

27. ***Coastal fisheries:*** The annual fish catch in the coastal waters of the delta is about 500,000-700,000 tons per year, employing about 25,000 fishing vessels, thus constituting a significant component of the delta economy. However, fisheries' indicators and surveys for Soc Trang, Bac Lieu and Ca Mau provinces already show downward trends and indicate that 70% of catch are composed of young, immature and increasingly less sought after fish species.

Agricultural extension systems

28. The project will take advantage of a strong framework of extension systems, as vehicles for scaling out options for sustainable management and production. As explained further under the description below of the proposed alternative scenario, the project will aim to move from a situation where extension programmes promote unsustainable production systems and practices, to one where their ?messages? and technical support packages integrate sustainability considerations, providing farmers with (and co-developing with them) productive options to that comply with considerations of environmental sustainability.

29. Extension services are currently provided by a range of actors: the most far-reaching is the public sector, but over the last few years the private sector has come to play an increasing role, mainly through contract farming or as services attached to input supply. Universities/Institutes often provide AE services directly related to pilot new technology, while NGOs provide services mostly aiming at sustainability and market linkages to trigger the adoption for large scale impact by the government and the market system afterwards. Mass organizations undertake social-political tasks and contribute to this work under specific programs or movements, mainly by supporting the organization of farmer groups to facilitate trainings.

30. The **public AE system** is organized into 5 levels: Central-level National Agriculture Extension Centre (NAEC) within MARD, Provincial centers within their respective DARDs, District stations under the control of the provincial extension center, Commune cadres, and Village/Hamlet collaborators and clubs.

31. The public sector AE system covers six main topics, including breeding, fertilizer, irrigation, disease, market and credit, through different channels. The plant protection system makes a major contribution, with a main focus on pest control and chemical use. Annually, NAEC delivers capacity building training for its system. Training contents target extension methodologies, covering various technical topics focusing on FFS, teaching techniques, curriculum design, farming techniques for particular crops including GAP, communication, information technology, extension project management, and relevant policies. However, capacity building measures on business development service and market linkages are yet to be addressed.

32. The Government provides subsidies and additional incentives to the farmers who receive extension services: this applies not only for regular/annual agriculture extension services, but also for AE training in all different programmes and projects including the rice restructuring programme, the VNSAT project and any agriculture extension activities organized by the government or using government budget. Government subsidies in AE provide major motivations for farmers to attend trainings and visit demonstration models.

33. In the MDR, the centre of agricultural technology transfer and training is located in Soc Trang province. The AE hub there provides agricultural technologies (include rice varieties and rice farming techniques) to the whole region, particularly training courses for AE officers of 13 the provinces and cities in the MDR.

34. **Private agriculture extension services** are mainly provided by large multi-national corporations including Syngenta (selling inputs via Loc Troi), Bayer, Corterva, Adama, BASF, FMC, UPL; and domestic enterprises, including for example Loc Troi group, VFC, ADC, Lua Vang, Tan Thanh, VIPESCO and VinaSeed..

35. These enterprises provide trainings, demonstration models and also advisory services. Their aims are either selling agriculture inputs through providing training and demonstration (on GAP, chemical use), seminars leaflets, workshops; or having contracts with farmers in order to ensure reliable access to high quality rice. Local shops, or companies? retail outlets selling inputs for agricultural production, sometimes provide some kind of extension services, but typically only focus on cultivation processes (e.g. methods of using fertilisers, planting techniques or pest control). These enterprises often come to localities to organize workshops and trainings aimed at the introduction of new cultivation processes associated with their products (for example, a certain type of rice varieties, or a certain type of fertilizers/pesticides).

36. As examples, Loc Troi, which is both an input provider and rice purchaser, has been introducing SRP to the farmers they have buying contracts with (11,000 ha in 2019[21]); while Olam, another major rice purchaser, has been involved in promoting GAP in collaboration with Oxfam.

37. Other companies do not provide technical services to farmers, but do provide marketing services which generate leverage for the application by farmer of sustainable practices, including VietGAP and Organic TCVN. These include Lai Sinh company buying organic rice in U Minh Th???ng and Kien giang; Ho Quang Tri Ltd buying VietGAP rice in An Minh and Kien Giang; and Qu?c Thai Tay Ninh Ltd. buying VietGAP rice in U Minh Thuong and Kien Giang.

38. Programmes/projects funded either by ***NGO or bilateral sources*** have addressed issues such as biodiversity and environmental sustainability, in addition to considerations of productivity and short term economic benefits. Notable examples include the World Bank Sustainable Agriculture Transformation (VNSAT) project[22], which aims to reduce the use of fertilizers and pesticides as well as market connectivity and high quality rice production, and the promotion by IUCN of flood-based production systems, combining considerations of resilience, disaster risk reduction and biodiversity, as well as economic viability and competitivenss.

Women?s access to extension[23]

39. Generally, women have less access to both AE services and the market. The degree of access to knowledge and skills by women differs depending upon their social-economic context, household conditions (e.g. whether one?s husband has migrated to an urban area for a paid job) and the subsector in which one is engaged. Rural women?s time constraints and their lower levels of education may limit their participation in courses offered at AE centres. Social norms may also hinder women?s mobility and their interaction with extension officers, who are mostly men. National data on AE staff are not available, but research indicates that only a small proportion of extension officers are women and that the understanding of gender-related issues among them is limited.

Development of value chains and standards related to sustainability

40. The project will take advantage of emerging value chain opportunities which have the potential to provide leverage for environmental sustainability based on productive diversification, while at the same time helping farmers and other actors to overcome constraints which currently prevent this potential from being fully realized.

41. Rising incomes and rapid urbanization are driving up demand in Viet Nam for high-value produce, and increasing consumer concerns on food safety. These changes are creating new market opportunities, but also present novel challenges to small-scale farmers and traders, as new markets may have special requirements in terms of quality and delivery deadlines. Local markets are also changing and supermarkets are taking a prominent place in Vietnam, as in much of Southeast Asia***[24]***.

42. Although the lack of strong linkages in the value chain was identified by stakeholders in the rice value chain SWOT study presented in Annex I as a major impediment to the adoption of advanced technologies and sustainable production practices, there is a strong tendency in the mid-stream segment of Vietnamese rice value chains towards vertical coordination and integration. AGPPS recently rebranded itself as Loc Troi (?God?s Gift?) with the aim of establishing a ?world-class sustainable value chain? with the ?mission of serving farmers?, an example which suggests that vertical coordination through contract farming may go hand in hand with implementation of sustainable production standards. Furthermore, as mentioned before, internalizing sustainable production standards probably goes hand in hand with embodying sustainability in the product through certification, requiring similar investments in communications and branding mentioned above. As the development of a sustainable image through branding takes time and is costly, it is expected that it will be applied on premium rice first (e.g. Jasmine).

43. The domestic market for organic products is relatively under-developed[25]. Demand usually comes from expatriates; upper middle class people who live in big cities, such as Hanoi and Ho Chi Minh City; and five star hotels or restaurants[26]. Low domestic demand to some extent is influenced by price and knowledge: however a 2005 study found the majority of respondents in the city of Can Tho, in the Mekong Delta, were willing to buy organic vegetables with an average price premium of VND 12,733/kg, about 59% higher than the market price of conventional vegetables, with the primary motivation being health benefits rather than environmental considerations.

Social, demographic and landholding conditions[27]

44. The feasibility and sustainability of options considered for natural resource management and agricultural production in the MDR depend on these being adapted to the social, demographic and tenure conditions of the area, including considerations of gender (see detailed data and analyses on gender issues in Annex I.1). Of particular significance is the fact that **the population is highly rural** (76.7% in 2012 compared with 68.3% nationally), and **60% of the region?s 17 million-strong population is engaged in rice cultivation**, meaning that modifications to the management of rice-based production systems will potentially have implications for a very large number of stakeholders. Furthermore, although **poverty rates have fallen in recent years** (from 10.6% in 2012 to 5.2% in 2016), the **multidimensional poverty rate is the highest in all regions of the country** (18.5% in 2016 and 17.1% in 2018)[28], meaning that to be feasible and acceptable the options must have a poverty reduction focus, and at all costs avoid exacerbating conditions of poverty and vulnerability.

45. The MDR has a **low annual population growth rate** (0.3% in the decade up to 2013), and there are **strong processes of rural-urban migration**, with all provinces in the region having experienced net outmigration in recent years. Options for management and production may therefore be constrained by limited labour availability.

46. Despite an overall male:female ratio of 98:100, **21.6% of rural households being female-led**, and **twice as many men as women employed in agriculture. Specific agricultural activities are strongly gender-differentiated** (rice, fruit, aquaculture and cattle production are all male-dominated in terms of labour division, while vegetable, pig and poultry production are female-dominated). Nationally, there is a trend of the ?**feminization of agriculture**? in Vietnamese rural areas due to men?s migration to towns and urban areas for non-agricultural jobs; and women?s transition out of the agricultural sector is slower than men?s, due largely to gendered roles within both labour markets and families[29], women?s burdens of unpaid care work, and fewer technical qualifications among women than men[30]. **Women also have significantly lower levels of access to property (and therefore capital and collateral) than men** (see Annex I.1)[31]. It will therefore be necessary, when proposing modifications to the balance of different productive options in the MDR, to take into account that these may have different effects on women and men, and to seek and promote options with the potential specifically to favour women and female-led households.

47. There are small and geographically limited, but **significant, ethnic minorities** (Khmer, Cham and Chinese) in the project area (see Annex J.1 for more detail). These are differentiated from the rest of the population in terms of their social organization, traditions and natural resource management and production practices, and the Khmer population in particular is significantly poorer than the majority Kinh, meaning that differentiated technical options and engagement strategies may be required.

48. Average landholdings in the MDR are larger than in other parts of the country, but **agriculture is still largely based on small scale production by a large number of smallholders** (69% of households own less than 0.5 ha of land). **Rural landlessness is much more apparent than in other regions of the country**, standing at 25% in 2011[32], with higher rates in An Giang. The fragmented pattern of landholdings has made it difficult to improve productivity through mechanisation, consistent investment in new seeds and technology, efficient water management etc. To address this, **the government has been promoting the ?large field model? (LFM) programme**, which has been most active in the MDR (see paragraph 0): project interventions will in general need to address the needs of smallholders and the landless.

49. All of the land in the project area is owned by the State, but land use (occupancy and usufruct) rights are well established over the great majority of the area. Specific tenure provisions and their implications for occupancy and usufruct rights vary across land categories. On agricultural land, households are provided with certificates of land use rights (?Red Books?). In Protection Forests, households are awarded ?green books? which give them land use rights: these allow them to maintain productive activities but do not allow them to change purpose and require them to maintain a proportion of their land in forest cover.

Policy, regulatory and planning context

Resolution 120:

50. The policy instrument at the heart of the project is *Resolution 120/NQ-CP on Sustainable and Climate-Resilient Development* in the Mekong Delta of Viet Nam, signed on 17th November 2017. Resolution 120 reflects a clear government trend to establish regional development across the

country whilst at the same time recognizing that each region has it owns challenges. It sets out the vision of the region by 2100 becoming:

?*A sustainable, safe and prosperous Mekong Delta, based on suitable development of high-quality agriculture products, combined with services, ecotourism and industries, focusing on manufacturing industry, enhancing the competitiveness of agriculture products; Infrastructure network is coordinately planned, developed, modern in an active, smart way and adapting to climate change; ensuring safety under disaster; reasonable use of natural resources; biodiversity and cultural tradition is conserved and enhanced; human lives and spirit are improved*?.

51. Of particular significance to the project is the third strategic orientation of Resolution 120:

?*Transformation of development model is based on* ***ecological system****, in* ***harmony with natural conditions, biodiversity****, culture and people, and natural rules. Combine modern, advanced technology and local indigenous knowledge, ensuring stability and livelihoods of people; people and enterprises play the central role while the Government takes the directing and guiding roles; promote innovation, creativity and support start-up, enhance application of science and technology progress, especially the Forth Industry revolution. The transformation process requires a long-term vision, prioritise climate change adaptation and take this opportunity to* ***develop low carbon economy, green economy and to protect natural ecosystem****?.*

52. Five solutions was proposed for the implementation of the resolution, of which the most significant in relation to the project are solution (1) on **territory space organization/arrangement and solution** (2) on **development of an integrated plan.** The solution on spatial planning requires (a) the establishment of ecological sub-zones to be served as the orientations of economic, agriculture and infrastructure development (flood plain, freshwater ecosystem, brackish water ecosystem and salt water ecosystem?); (b) the organisation and development of urban systems and rural areas in accordance with characteristics of natural ecosystem and specific conditions of the region and each ecological sub-region; review and completion of land use plan, and population redistribution that controls and limits establishing dense populous areas adjacent to rivers, canals to avoid high risk of landslides; preservation of flood drainage space to ensure the safety and assets of the local people.

53. In order to develop an integrated plan for the region, the resolution stresses that:

?*The new development plan needs to* ***shift from ?living with floods? to ?actively living with floods, inundation, brackish water and saltwater?*** *based on the master plan for integrated water resources in the river basin; use water efficiently and sustainably to ensure sufficient fresh water for people, and for activities in the brackish water and salt water areas. Rationally exploit the potentials of brackish and salt water resources in coastal areas for socio-economic development. All projects, works must be carefully considered and analyzed based on three aspects: economic, social and environmental with adequate objective, scientific feedbacks*?.

54. The Resolution addresses a range of issues and defines key responsibilities for a wide range of agencies. One central premise is that climate change and sea level rise are irreversible and that **long-established traditions of living with and adapting to floods in the MDR need to be at the centre of the development approach** and extended to address new challenges such as salinization. The Resolution states that ?*Water resources should be the core factor and the basis for developing strategies and policies*? (Article 3). It also proposes a ?*Comprehensive and integrated approach to socioeconomic development of the Mekong Delta,* [to] *boost development connectivity and cooperation of intra region and between the Mekong Delta and Ho Chi Minh City, the South East provinces and other regions, between Viet Nam and other countries*?, a position that reflects well the need to enhance cooperation within and between cities and provinces. However, there is no multi-stakeholder coordination mechanism officially put in place for integrated landscape management at national and regional level.

Agriculture sector planning

55. Resolution 120 has driven changes to the perspectives of the Ministry of Agriculture and Rural Development (MARD) about the development vision and strategy of the MDR. For the first time, MARD has developed an agricultural development program for an ecological region in the country, namely ?*the overall program for* ***sustainable agricultural transformation*** *(PSAT) to adapt to climate change in the Mekong Delta?.* MARD acknowledges that the unsustainable development

of the Delta is caused by internal unsustainable agricultural development activities, and external factors including climate change, upstream hydropower plant development, urbanization and others. The PSAT recognises that external factors are hard to control, and that emphasis should be placed on addressing internal factors that lead to unsustainability.

56. MARD has established, as the vision of the programme:

?***Developing the Mekong Delta's agriculture in a sustainable and safe manner*** *on the basis of modern and high-quality commodity agricultural production, combining eco-tourism and processing industry, raising the value and competitiveness of agriculture product*?.

57. **?Climate-smart agriculture?** and **?no-regret?** are now core principles of MARD?s development strategy of the Delta: thus means that infrastructure is planned and developed in a synchronous, modern, proactive and intelligent manner, adapting to climate change, and with less investment on the kinds of ?hard? irrigation infrastructure that risk creating irreversible impacts on the environment, ecology and topography of the Delta. The programme puts more focus, instead, on ?soft? components (extension, processing, marketing, logistics) to increase the value of agricultural production. To implement these principles, the Ministry has collaborated with the World Bank and MDR provinces to completely change the approach of the two key projects[33] related to improving the climate change adaptive capacity of the Delta with a total budget of US$ 600 million. Instead of focusing on irrigation infrastructure (dykes, sluice gates and canals) as previous ones, these two projects were designed based on careful research on livelihood strategies emphasizing on market potential, suitability of natural conditions, value chain development and logistic services establishment.

58. MARD has now confirmed the **structural commodity change from a ?rice first? policy to ?aquaculture ? horticulture ? rice?** which will be flexibly applied depending on the natural conditions of each sub-region within the Delta. This significantly clarified the previous situation in which, for example, Decree 42[34] and Decree 35[35] of the National Assembly emphasized the importance of rice land preservation for food security, while other documents such as Decision 99 (2000)[36] and Decision 899 (2013)[37] of the Government encouraged farmers to diversify their farming systems. Most recently, with the proposal from MARD, the National Assembly issued Decree 62 which revised Decree 35 allowing localities and farmers to register for changing from rice land to other farming systems.

59. MARD also emphasises **inter-provincial and landscape approaches** in designing the development strategy for the MDR. Following the Mekong Delta Plan 2013, in its PSAT, the Ministry divided the Delta into 3 sub-regions (Upper, Middle, and Coastal) and developed development strategies at sub-regional. This is a noticeable change in the mindset of MARD leaders, as most annual and five-year agricultural development plans and technical production guidelines of MARD were targeted at provincial level. Since the issuance of Resolution 120, MARD has actively promoted inter-provincial institutions by supporting technical advice and facilitating the eastablishment of ad hoc inter-provincial protocols and networks. Currently, with help from MARD, some provinces in Upper zone (including An Giang, Hau Giang, Can Tho and Kien Giang) are finishing the final steps for forming a Long Xuyen Rectangle Inter-provincial Consortium.

60. Most recently (March 2020), the Government of Vietnam approved the **Comprehensive Program for Sustainable Agriculture Development in response to climate change in Mekong Delta until 2030 and vision 2045** (Decision No 324/QD-TTg)[38], prepared by MARD through its Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD)**.** This establishes the following objectives for the rice sector:

- **By 2030, total area for rice cultivation will be reduced to 1.6 million ha** (with around 300,000 ha transformed to fruit tree cultivation and aquaculture production). The total cultivated area for rice (i.e. the area cultivated multiplied by the number of cropping cycles) will be 3.1 million ha (a reduction of 1 million ha due both to reduction in areas and number of crops per year); and **total rice production volume is expected to fall by 6.3 Mt**, to 17.3 Mt.

- **Restructuring of cultivation varieties, including increases in production areas with verified/certified varieties**, high quality, high resistance to drought and salt; varieties that meet export market requirements in order to move progressively to cultivation of high quality rice, particularly for domestic demand and high value markets (while maintaining a certain area for average-quality rice production for processing for export);mechanisation all stages of production; and application of science and technology to reduce production costs and agricultural inputs.

- **Encouraging enterprises and farmers to invest in agriculture**, focus on deep processing, using by-products to produce high value products from rice, and developing storage warehouse clusters and pre-processing for high value products; and, near the production areas, establishing high-tech processing industry zones and clusters and logistic centres in order to support links to markets.

- **Maintaining traditional markets, while studying and developing potential exporting markets**, focusing on the product groups that in the Program/Scheme for Restructuring Vietnam?s Rice Sector by 2020, vision to 2030[39].

- **Establishment of commercial centres, wholesale markets and outlet chains** in the specialised production areas, cities and industrial zones.

61. The GoV plans for the following programmes and projects related to the rice sector:

- Program on strengthening monitoring mechanism for supply system, examining/controlling quality of inputs for agriculture production (2020-2025)

- Infrastructure project: Building Mekong Delta Centre and visualize supporting tool for sustainable agriculture development responding to climate change (integrating with other projects) (2020-2030)

- Program on attracting investment on development of rice value chain and support cooperative economy for rice sector (2020-2030)

- Program on information, forecasting and market development for key products of rice sector (2020-2030)

- Projects on building rice sector clusters (2020-2030)

- Program on supporting livelihood for farmers cultivating third crop to change their practices (2020-2030)

62. One of the most significant measures to be supported will be a **reduction in the intensiveness of rice production**, including a **move from three rice crops per year to two**, and associated with this a **reduction in the overall area of rice production** and corresponding **increase in the area of other crops** (see the example of Vin Long province in Annex S).

63. Decision No 324/QD-TTg also provides for overall zoning of the MDR into:

- ?**Safe**? (i.e. no change) areas with a continued focus on single, double or triple cropped rice (11,205,000 ha);

- ?**Transformation**? areas which will be converted either to fruits and fisheries, from three rice crops to 1.2 crop rotations, to intercropping of high value vegetables/aquatic products, or to high quality speciality rice (444,000 ha);

- ?**Flexible**? areas, some of which may be kept as rice or shrimp/rice, some converted to fruits and coconuts, and some to aquatic products (260,000 ha).

64. This zoning will provide the overall framework for defining the production systems to be supported through the project, which will be defined in more detail on the basis of dialogue and planning processes at provincial and district levels and participatory analyses at farm level.

[4]*Regional planning and coordination*

65. The establishment of new approaches to achieve climate-resilient development is central to the Government?s thinking, and the approach that is to be piloted in the MDR will, if successful, be assessed and adapted to the characteristics of other regions of the country. During the present decade, the Government has issued a number of decrees and policies that impact on climate resilience planning, regional and provincial planning and investment budgeting. In 2014, the Prime Minister issued Decision 245/QD-TT approving the master plan for socio-economic development for the Mekong Delta Key Economic Region. The master plan indicates that **Can Tho, Ca Mau, An Giang and Kien Giang are the key provinces for commerce and trade in the MDR**, especially rice, fruit and aquaculture production and processing. Prime Ministerial Decision 2360/QD-TTg in 2017

promotes regional economic development through a regional council and working groups at provincial and ministerial levels.

66. Pilot multi-provincial or regional coordination for Mekong Delta region was initiated in 2016: Prime Ministerial Decision 593/QD-TT of 2016 and its Action Plan outline the **pilot for regional coordination in the Mekong Delta** by developing inter-provincial projects and programmes as well as institutional development for the region. On the 18th January 2017, the government issued Decision 64/Q?-TTg establishing the **National Steering Committee for Regional Coordination in the Mekong Delta** to supervise the implementation of the pilot activities to 2020.

Mekong Delta Plan:

67. The **Mekong Delta Regional Plan** (see Annex T) is currently being developed (by Royal HaskoningDHV and GIZ, with financial support from the World Bank) and is expected to be complete by the end of 2020. This is the **first attempt in Vietnam to develop a regional development plan**, particularly under the new Planning Law (which was introduced in 2017 and came into effect in 2019). Under the new law, regional development plan will be the foundation for provincial multi-sector development plans, instead of the previous situation where there were a number of sectorial development plans at provincial level.

Provisions for multi-stakeholder coordination

68. In order to implement the new planning law effectively, coordination is critically important to develop sound development plans at both regional and provincial levels, and understanding the concept of integrated planning process is vital to bring all relevant stakeholders on the table contributing the sustainable development of the region. In order to develop the master plan for the whole region, the Ministry of Planning and Investment has been assigned to coordinate with other line ministries and provinces in the region.

69. There are a large number of existing or recent initiatives intended to engender regional and sub-regional coordination in the Mekong Delta (see Annex U).

Private sector engagement

70. The engagement of private sectors in supporting environmentally sustainable production systems and green value chains is in line with the sustainable development direction on ?stimulating private sector (enterprises) to invest in sustainable, efficient and safe agriculture? where agri-business was identified as the ?driving force for Vietnam agriculture development?[40]

Pressures and threats undermining sustainability in the Mekong Delta[41]**:**

71. The interaction in the Mekong Delta of a number of anthropogenic processes, operating at local and global scales, is leading to globally significant environmental impacts that are affecting the conservation status of globally important biodiversity, undermining the long-term productive potential of the land to sustain food systems, and contributing to climate change. The clearing of forest and drainage of swamps and wetlands to permit agriculture has been historically one of the major contributors to the evident loss of biodiversity within the Delta. Only 20% of the mangroves present in 1943 now remain[42]. Many areas unsuitable for rice or crop production have been cleared to construct aquaculture ponds, mainly for shrimp. The rate of clearance has now dropped, but this is mainly because there are fewer uncleared areas remaining.

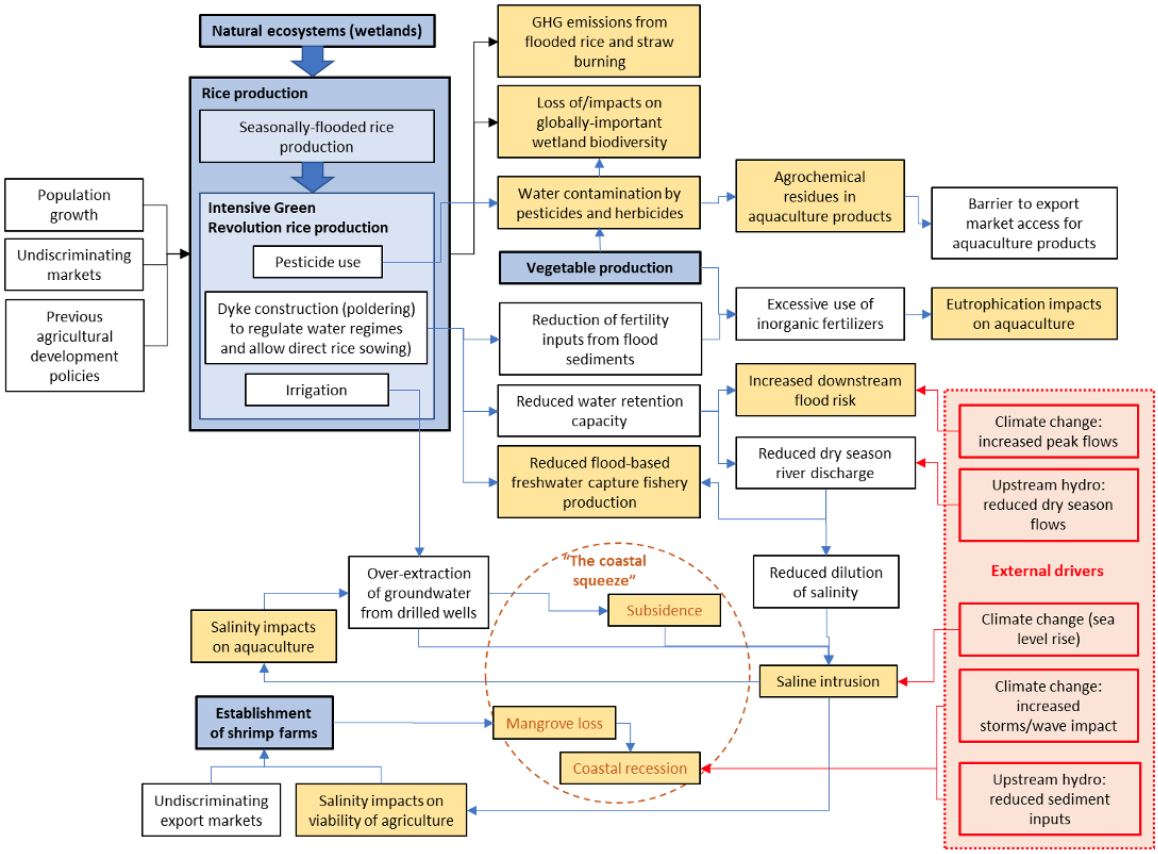
72. The pressures and threats portrayed in Figure 8 and detailed below consist of a combination of:

- ***Historical factors*** (most significantly, the conversion of wetlands and other natural ecosystems to rice production systems, followed by intensification associated with the introduction of ?Green Revolution? practices and driven by population growth, undiscriminating markets and agricultural development policies);

- ***Addressable ongoing and emerging factors***, including the overuse of agricultural chemicals, the over-extraction of groundwater and the perpetuation of modifications to flooding regimes;

- ***External factors*** which are outside the direct control of the project (including climate change and upstream hydroelectric dams), which may act as constraints on the effectiveness of project strategies, and to which it is necessary for the project to make provision for resilience.

Figure 8.Schematic representation of the threats analysis

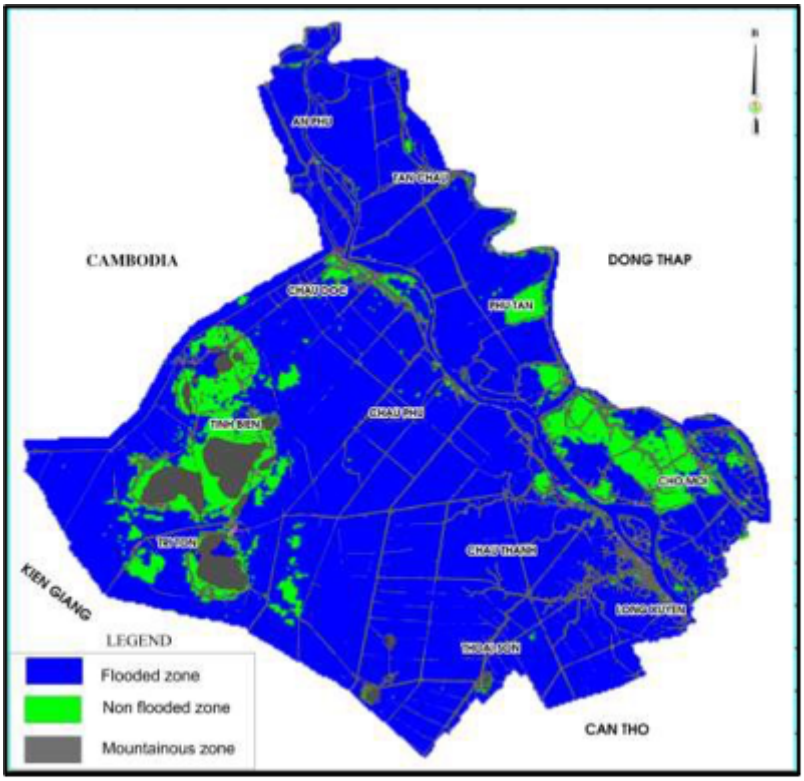


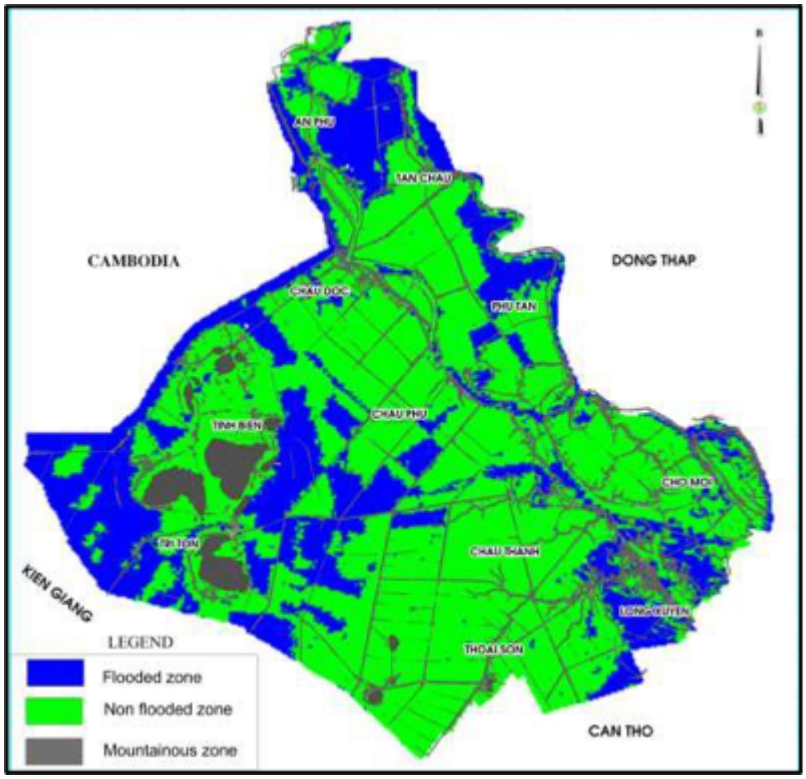
***Hydrological modification*[43],[44]**

73. There has been a huge increase in the area of poldering in the MDR in recent decades. This involves the construction of levee banks around rice paddy areas, to exclude flood waters. Instead of rice being planted at the commencement of the natural flood and growing as the flood waters naturally rise, the level at which the water rises is controlled by allowing flood water to enter through water control structures. The advantage for the farmers is that instead of rice being grown in seed beds and the seedlings transplanted, the seed can be directly planted in the fields. With the natural flood, rice had to be planted as seedlings because the taller seedlings were less liable to be ?drowned? through a sudden rise in water leve; direct planting of seed is far less labour intensive, however, and so is preferred by farmers. In addition, where water levels are closely controlled rice cropping has increased from one crop a year to two or even three crops.

74. **The development of large-scale polders has had a dramatic effect on water flows and flood vulnerability** in the Delta. The floodplain now contained behind the levee is no longer connected to the river as it once was and is no longer able to store flood waters (between 2000 and 2011, high dyke building for rice production reduced the total flood storage by half, from 9.2 billion m3 to 4.7 billion m3). Consequently, the flood heights in non-poldered areas are substantially higher, because they now have to store greater volumes of water than previously: these areas are therefore now being inundated for longer periods and to greater depths, disrupting wider landscape ecology, while the natural ecosystems within the levee have also been completely modified.

Figure 9.Changes in the extent of the flooded zone in An Giang Province, 2000-2014[45]





73. The results of these modifications include:

- **Increased downstream flooding**[46]
- **Sediment loss and declining soil fertility** (in An Giang province, total yield from some triple cropped areas are actually lower than yield from neighbouring double-crop areas which are still partially connected to the annual flood cycles); this is often compensated for by a large **increase in use of agrochemicals**[47]
- **Exacerbation of salinity intrusion and associated crop impacts,** due to reduced dry season river discharge, which is important for moderating and reducing salinity intrusion[48],[49]

- **Reduced shallow aquifer recharge**
- **Accumulation of Persistent Organic Pollutants**[50]

- A large **decline in capture fisheries**. Between 2000 and 2011, the lost fisheries value as a result of building high dikes was estimated at US$1,000/hectare[51].

- **Impacts on biodiversity values in wetlands:** Box 2 explains the implications of hydrological management for conservation values (bodiversity) in Tram Chim National Park. While the studies quoted focus principally on the effects of water management carried out within the site itself, given its condition as an isolated remnant ecosystem in an otherwise intensively-farmed rice landscape, its ecosystem conditions and biodiversity values are also highly dependent on landscape-wide cross-surface flows, and potentially affected by modifications to water management regimes in the broader landscape.

Box 2. Implications of hydrological management for conservation values in Tram Chim National Park[52],[53],[54], [55].

Tram Chim National Park supports one of the last remnants of the Plain of Reeds wetland ecosystem, which previously covered some 700,000 ha of Dong Thap, Long An and Tien Giang provinces. The national park is located 19 km to the east of the Mekong River, at an elevation of about 1 m.

The topography of the national park is flat, and slopes slightly to the east. In the past, several natural streams and rivers flowed from west to east, distributing water from the Mekong River to the Plain of Reeds. Now these streams and rivers have been replaced by a system of canals, some of which flow through the national park

Prior to canalization, the Plain of Reeds was seasonally flooded with standing water for continuous periods of up to seven months per year. Since canalization, floodwaters drain more rapidly, and the national park is flooded for less than six months per year. Water levels in the canals begin to rise in June, at the beginning of the rainy season. Between September and December, the national park is inundated to a depth of 2 to 4 m, with a peak in October.

Since the mid-1980s, 53 km of dykes fitted with sluices have been constructed around the national park, with the aim of impounding floodwater for longer, and reducing the lowering of the water table during the dry season. The national park is fragmented by canals into five management zones; the water level of each can be managed separately.

Tram Chim now has national park status, which confers a relatively high degree of protection, yet several threats remain. The frequent encroachment of local people into the national park to hunt and collect firewood is a conservation issue. Also, because the site is surrounded by rice cultivation, land-use activities outside the site can have a substantial impact on the integrity of the wetland ecosystem of the national park. Examples of such impacts are pollutant discharge and alteration of natural water levels.

In 2000, the national park management board began constructing six canals inside the national park, the construction of which could have fragmented the natural habitat and altered the water regime, leading to changes in habitat. However, construction of the canals was halted after only two were completed.

The construction of canals is not, perhaps, the major threat to the Sarus Crane population at Tram Chim. The most important factor in maintaining suitable habitat for this species is appropriate management of water levels at the site. In 2000, a partial draw-down was carried out, and, in 2001, a full draw-down took place, as a result of which there is a lot of evidence of natural vegetation recovery. It is hoped that such appropriate water-level management will result in an increase in the crane population at Tram Chim.

Water pollution[56]

76. The waterways of the Mekong Delta have the poorest quality water of any locations sampled by the Mekong River Commission within the Mekong basin. Poor water quality in the Mekong Delta is almost entirely a consequence of human activities within Viet Nam: the contribution of pollutants from Cambodia is trivial.

77. Nutrient levels are high and are increasing, through **runoff of fertilizers used in agriculture**, as well as the **food and waste materials derived from aquaculture activities**, and **sewage and urban wastewater**.

78. High levels of **DDT and PCBs from agricultural activities** have been recorded, particularly in sediment near urban areas, and relatively high concentrations of DDT (38.6 ng/g) have been found in soft tissues of molluscs collected from the delta, together with PCBs, endosulphan and chlordane. The fungicide isoprothiolane and the insecticide buprofezin are among the pesticides found in highest concentrations (up to 20.8 and 16.5 m g/L respectively).

79. In general, chemical usage in rice production in the Mekong Delta is still less than most of the other crops. On average, farmers in 2-crop rice and 3-crop rice use 18.8 and 29.1kg of pesticide per hectare annually. Rice production in intercropping models (such as rice-shrimp) barely uses chemical products because income from these aquaculture products is much higher from rice production. To compare, farmers in rice-vegetable models use 46.1 kg/ha/year; vegetable mono-cropping use 73.0 kg/ha/year, and intensive fruit tree farmers use up to 155.7 kg/ha/year (for harvesting area).

80. Water quality may impact aquatic animals directly (including, potentially, aquaculture farms), but also has potential indirect effects. As nutrient levels rise, so do the risks of toxic algal blooms which could trigger fish kills. Slow water movement in the dry season makes this the time of year when risks are greatest.

Groundwater depletion, salinization and subsidence[57]

81. In the past, rice farmers relied on networks of freshwater canals for irrigation and domestic uses. These canals were the route by which new sediment was added to the land during the rainy season. **Productive intensification in recent decades has led to increasing pressure on groundwater resources through drilled wells, and disrupted a centuries-old system that favored re-sedimentation**. More than a million wells have since been drilled in the Delta, and subsidence has been accelerating ever since. Overall, the Delta is estimated to be subsiding at a rate of 1.6 cm per year, and rice yields are expected to decline from 6-12% due to inundation and salinity intrusion[58].

Figure 10. Extraction-based subsidence rates in the Delta, 1991-2015[59]

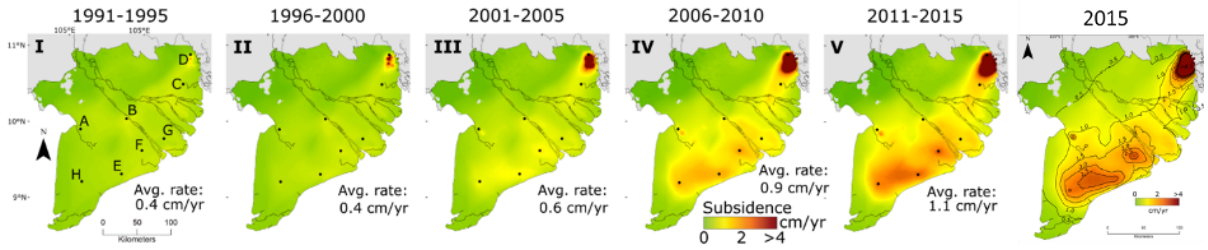
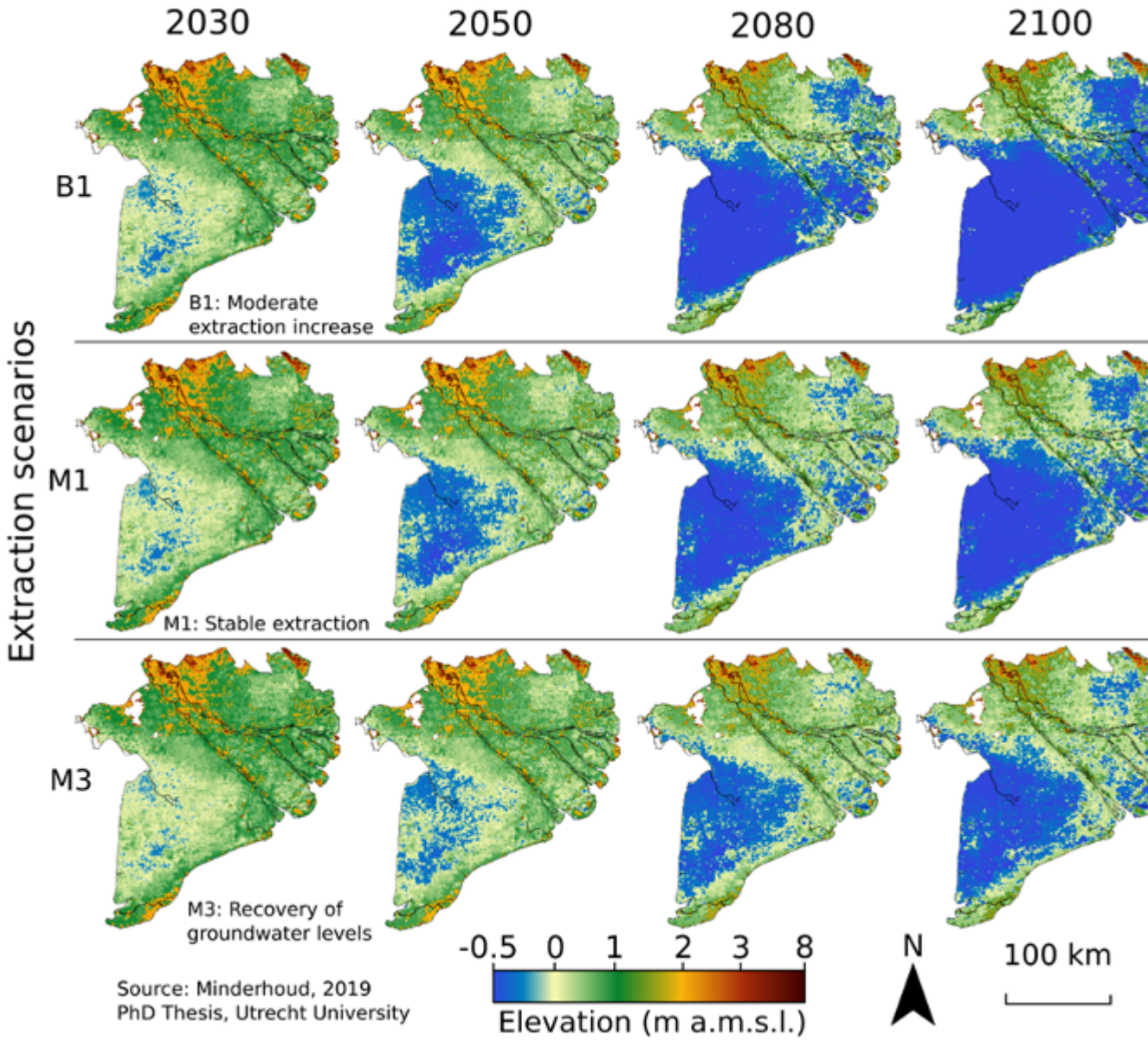


Figure 11. Future elevation relative to sea level in 3 scenarios



B1. annual growth of groundwater extraction by 2% since 2018
M1. 0% growth after 2020
M3 gradual reduction towards 25% after 2018

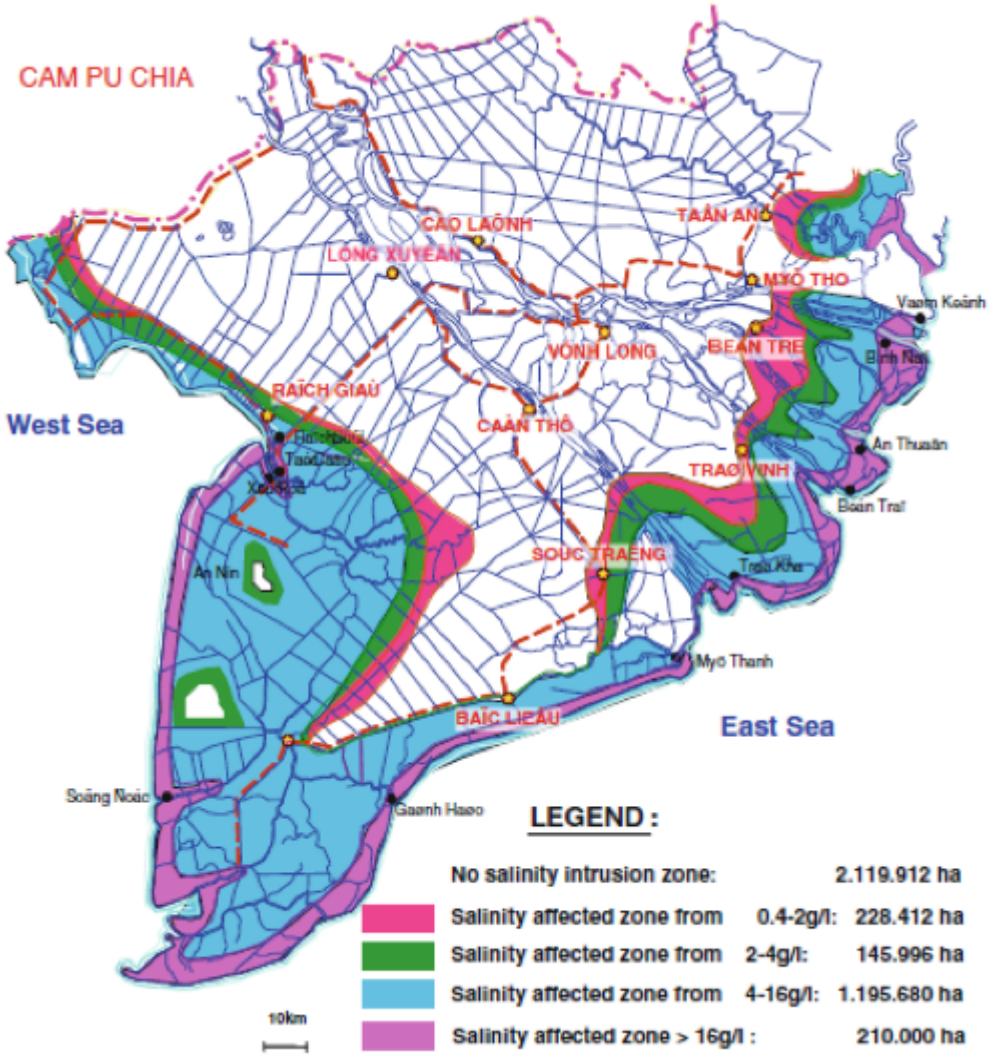
82. In many locations rice farming has given way to a more lucrative shrimp industry which has significant needs for fresh groundwater. Shrimp are raised in brackish ponds, but their yields decline if the water gets too salty: shrimp farmers therefore use groundwater to continually dilute the ponds.

83. Overexploitation of groundwater is especially a problem in C? Mau province, on the Delta?s southern tip. More than 100,000 wells have been drilled in the province, shrimp farms abound (C? Mau has more than 280,000 ha of shrimp farms, which was projected to reach 279,000 ha of brackish water shrimps and 15,000 ha of giant freshwater shrimps by 2020[60]), and the urban population soared from approximately 66 million in 1990 to 90 million in 2013. Subsidence in C? Mau now averages about 3 cm per year, according to a recent analysis.

84. Groundwater pumps are drilling deeper to reach groundwater, and the water that comes up is saltier. That is also the case along a heavily populated coastal stretch from C? Mau to Ho Chi Minh City, about 250 km to the north. Saltwater is penetrating farther into the Delta every year. Being heavier than freshwater, saltwater migrates down through sediments into shallow aquifers from above: this makes the groundwater increasingly non-potable. Furthermore, salt ions also react chemically with the sediments, making the ground more prone to oxidation, compaction, and therefore subsidence.

85. Where there is a lot of pumping, saltwater can also contaminate fresh groundwater resources from below. Fresh groundwater typically resides over more ancient seawater that can be pulled upward by excessive pumping. That process usually takes several years, but it can take decades or more for the salt levels in contaminated freshwater aquifers to decline once extraction has ceased. A newer concern is that excessive pumping also could introduce arsenic into deep groundwater aquifers.

Figure 12. Areas affected by salinity in April in the MD (SIWRR 2010)



86. Ground water levels and quality are also affected by management in neighbouring Cambodia, given that the Mekong aquifer spans both countries. These transboundary impacts include reduced upstream groundwater recharge due to deforestation; drops in aquifer levels due to agricultural, domestic and industrial overextraction in Cambodia; and decline in groundwater quality due to cross-border flows of agricultural, domestic and industrial pollutants. These transboundary impacts will be addressed by the complementary GEF International Waters project ?Enhancing sustainability of the Transboundary Cambodia - Mekong River Delta Aquifer? which is currently under preparation.

Agricultural contributions to GHG emissions and air pollution[69][5]

87. Flooded rice production systems are a major source of emissions of methane (CH_4): under anaerobic condition of submerged soils of flooded rice fields, methane is produced and much of it escapes from the soil into the atmosphere via gas spaces in the rice roots and stems, and the remaining CH_4 bubbles up from the soil and/or diffuses slowly through the soil and overlying flood water. Globally, rice cultivation contributes about 10?14% of total global anthropogenic emissions of methane, which is approximately 28 times more potent as a greenhouse gas (GHG) than CO_2.

88. Open-burning of straw is a common practice in Vietnam and is also a major source of GHG emissions, as well as generating particulate emissions which are a significant cause of respiratory diseases. The Delta yields ? 20 Mt of paddy and ~24 Mt of dry straw annually: total GHG emissions from rice straw burning in triple rice cropping systems in the Mekong Delta have been found to amount to 1688 g CO_2-eq./kg of dry straw.

89. Rice cropping patterns (2 or 3 rice cycles) and the nature of rice harvesting (combine harvester or by hands and threshing on the side of the fields) have a strong incidence on open-burning and GHG emissions. On-field burning of rice straw is commonly practised in intensive triple-cropped rice production systems, where there is a short time to prepare the field for the next crop. This situation mainly occurs between the spring and the summer rice cycles in most of the coastal provinces.

90. With the increasing use of combine harvesters the threshed straw is (poorly) scattered on the soil surface and remains in rows. When harvested by hands the rice straws (after threshing) are piled in a stack for burning or used for mushroom cultivation and then burnt later on.

External pressures and threats requiring adaptive measures

91. In addition to the pressures and threats described above, there are a number of highly significant other factors which affect environmental and productive conditions in the project area, which are outide of the direct control of the project, but to which it must be resilient and adaptive in order for its strategies and impacts to be durable.

Climate change[61]

92. In the IPCC Fourth Assessment Report (2007), the coast of the Delta is mentioned as a hotspot for climate change, with an extreme relative vulnerability. Climate change has been posing a greater flooding threat as a result of rising sea levels near low-lying land at the mouth of the Delta, and increased rainfall. Among the climate change impacts to-date, the Delta has experienced a 30% annual increase in rainfall, shifting rainfall patterns, an average temperature increase of 0.5^{o}C over the last 30 years, and an average sea level rise of 3mm/year over the last 30 years. Climate change impacts are predicted to become more severe, with projected increases in average temperatures of 1.1^{o}C to 3.6^{o}C relative to the 1980-2000 period. Average sea level rise is estimated at 28-33cm by 2050 and 65-100cm by 2100[62]. Furthermore, the maximum flow of the Mekong is estimated to increase significantly, while minimum monthly flows are predicted to decline, leading to increased flood risks during wet season and an increased possibility of water shortages in dry season.

Box 3. Climate change projections for the Mekong Delta by the USAID funded Mekong ARCC project[63]

- Increasing precipitation throughout the basin will lead to **increased annual flows** in the Mekong mainstream. Climate change will **increase the size of the flood peak**.
- The **variability of the Mekong flood pulse will increase** with climate change. Annual minimum daily flows will increase up to 100 m3/s. Annual maximum daily flows will increase by two orders of magnitude and greater reaching an increase of close to 10,000 m3/s..
- Sea level rise and increasing average flood volumes will **increase the depth and duration of average floods** in the Vietnamese Delta and Cambodian floodplains. Large areas which were historically rarely or never flooded to depths of 0.5-1 m are projected to be regularly inundated to these levels. Maximum flood depths are projected to increase by over 1 m.
- Sea level rise, increasing extreme flood volumes and escalating cyclone activity will **increase the depth and duration of extreme floods** in the Vietnamese Delta.
- The **period of agricultural drought per year may significantly increase** in large areas in the south and east of the basin by 2050. Areas of the Mekong Delta will experience a 10% to 100% increase in drought months.

93. Climate change-induced changes in the extent and duration of saline intrusion in the Mekong Delta are highly sensitive to the use of human built water control infrastructure (i.e., dikes, canals and sluice gates). The delta contains more than 3,900 canals and more than 5,000 sluice gates and hydraulic headworks. Increases in salinity concentration and duration in the coastal delta is directly related to the reduced amount of Mekong river flows during the dry season as a consequence of the declining flood retention areas that release flood waters at the end of the flood season. Sea level rise increases the dry season salinity concentrations and intrusion distance.

94. Likely impacts of climate change on agricultural production (holding all other relevant variables constant) include[64]:

? **For rainfed (seasonal) rice, yields are likely to decrease** as a net impact of changes in rainfall, evapotranspiration, temperature and CO_2.

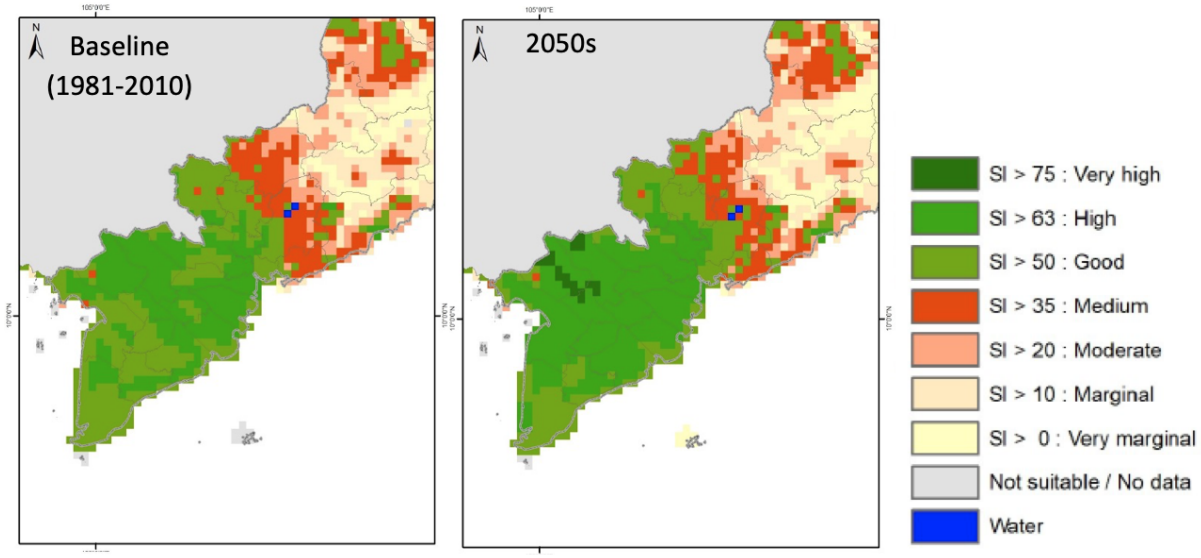
? **For irrigated rice (two-crop and three-crop systems), there is likely to be a net increase in yields.** Any negative impacts of higher evapotranspiration can be offset by higher volumes of irrigation pumping (up to almost 18% more irrigation water required in the dry season). Given higher estimated flow regimes at Tan Chau, it is likely that additional irrigation water will be available. However, **this will increase the costs of production** as more energy is used to pump water.

? **For maize, yields are expected to improve marginally** as a net impact of changes in rainfall, evapotranspiration, temperature and CO_2.

Table 2. Potential impacts of climate change on yields and inputs by 2050[65]

	Change from baseline A2	Change from baseline B2
Rainfall/Seasonal Rice		
Rice yield-rainfall	-1.6%	-11.0%
Irrigated rice		
Increase in dry season irrigation requirments for rice	+15.2%	+17.7%
Rice yield-providing irrigation shortfall can be met	+22.0%	+14.3%
Maize		
Maize yield	+1.2%	+0.7%

Figure 13. Rice suitability index (SI) in the Mekong Delta (High input level, RCP 4.5)[66]



95. Shrimp production is vulnerable to the effects of climate change, in particular, increasing salinity levels, more extreme droughts like the El Nino driven 2015-2016 drought, and higher maximum ambient temperatures. These extreme conditions forces intensive shrimp producers to pump ground water to cool pond water and dilute lethal alkalinity and salinity levels[67]. These conditions have also forced intensive shrimp farmers to continue to rely on the widespread use of antibiotics that threatens Vietnam?s largest aquaculture export, and contaminates current organic shrimp production from Integrated Mangrove Shrimp (IMS) systems. Bio-secure and zero-exchange technology are also contributing to the problem of ground water pumping because they encourage farmers to refrain from using surface water for dilution because of the fear of introducing disease.

96. Recent evidence that ground water extraction in these coastal provinces is driving subsidence of up to 2.5 cm/yr demonstrates that land-uses such as intensive shrimp are unsustainable as droughts, maximum ambient temperatures and salinity intrusion continue to intensify under climate change. The 2015-2016 El Nino, the worst drought in a century, resulted in damage to 69,000 ha of shrimp growing area and VND 7.5 trillion in economic losses[68] despite the widespread use of ground water pumping through the El Ni?o.

97. In summary, CC-related sea level rise, storms and droughts, combined with other factors not directly related to climate change (including subsidence and changes in hydrological regimes and sediment inputs) pose greater threats to the sustainability of rice production than the temperature increases that are expected as a direct result of global climate change. It is therefore necessary for the natural resource management and production options that the project will support to include provision for resilience to these current and projected implications of climate change; and where possible to provide livelihood alternatives to those whose current livelihoods are affected by climate change.

Sea level rise and coastal erosion[70]

98. Sea level in the Delta is currently rising at a rate of 3.34 mm/yr, and more intense storms and storm surges are projected[71]. Current coastal defences consisting of a compacted earth sea dyke, and a thin line of protected mangroves in front of it, leave coastal communities in a situation of extreme risk. Although regulations[72] stipulate that at least 500 m of mangroves need to be maintained in front of the sea dyke, this buffer does not exist along approximately two-thirds of the coastline where it is impossible to reforest: here, mangrove depth is typically less than 100-200 m and in many areas more sea dykes are being totally exposed to direct wave action and leading to erosion and increasing maintenance costs. Due to erosion and cutting forest for aquaculture and inshore fishing, the loss of coastal mangroves is around 500 ha/yr (about 1%)[73].

99. What mangroves that are left in front of the sea dyke will disappear as the ?coastal squeeze? accelerates through a combination of: 1) reducing sediment loads in the Mekong River from upstream hydropower dam developments and sand mining; 2) the possibility of >1m sea level rise

by 2100; 3) coastal subsidence of up to 2.5 cm/yr; 4) and changing coastal dynamics. Long-term maintenance of the mangroves in front of the sea dykes is not possible given the presence of the sea dyke and the effect of the coastal squeeze[74].

100. Satellite monitoring shows large-scale shoreline erosion and land losses between 2003 and 2016 that now affect over 50% of the once strongly advancing >600?km-long delta shoreline. The erosion pattern, with no identified change in the river?s discharge and in wave and wind conditions over this recent period, is consistent with: (1) a reported significant decrease in coastal surface suspended sediment from the Mekong basin that may be linked to hydropower dam retention of its sediment, (2) large-scale commercial sand mining in the river and delta channels, and (3) subsidence due to groundwater extraction. In the coastal area of Ca Mau and Kien Giang, the sea dyke system with an average height of 1.2m still provides adequate protection for most districts, however long-term vulnerability is assessed high and shoreline erosion is already resulting in first resettlements of coastal populations[75].

101. This situation makes these coastlines extremely vulnerable and at high risk to projected increases in storm intensity and storm surges. The sea dykes currently have less than half a metre of freeboard at the high tide mark. In 1997, Typhoon Linda produced a storm surge of between 0.8m and 1.5m along the eastern coastline of the Mekong Delta. This caused US$ 385 million in damages, destroyed 200,000 homes, and rendered 383,000 people homeless[76].

102. Recent innovation in the use of soft engineering using sediment-trapping/wave-breaking bamboo T-Fences can only restore gaps in the mangroves, but cannot reforest mangroves beyond the current shoreline[77].

103. What makes these coastlines even more vulnerable is that for two-thirds of the coastline, for example the 100km stretch along the Soc Trang and Bac Lieu coastline, the landuse behind the sea dykes is dominated by relatively treeless, intensive shrimp growing landscapes.

104. The combination of the eventual loss of the shoreline mangroves from the coastal squeeze, and land-use for intensive shrimp behind the sea dyke that is contributing to serious land subsidence is increasing the disaster risk along these coastlines. The threats posed by sea level rise and coastal erosion reinforce the need for applying a landscape-level perspective to planning that prioritises the recognition, protection and restoration of areas of ecosystems that are capable of buffering against these threats; applying an adaptive approach to land use and production in the affected areas, which recognises the need for practices to adapt over time towards options that are more tolerant of and resilient to the threats (such as salinity); and that provides for the potential migration of production systems and settlements across the landscape as the threats advance.

Mekong Dams

105. In recent years there has been a resurgence in water resource development in the Mekong Basin, with a number of newly constructed dams in the Chinese section of the river and a number of others about to be constructed, or planned or under consideration in Laos and Cambodia[78].

106. The developments will impact the Delta in three ways. They will alter the hydrology of the river, block fish migration pathways, and trap nutrients and sediment. The major impact on hydrology will not be an overall reduction of stream flow, but rather an alteration in flow with a (relatively small) decrease in wet season flows and a fairly large relative increase in dry season flows. The impacts of the hydrological changes in the Delta will be more water flushing through the system in the dry season and slightly reduced average flood heights in the wet. This may reduce saline encroachment up the channels in the dry season, which has become more severe as more and more freshwater is extracted from the channels for multicropping of rice by Vietnamese farmers. However, more availability of freshwater, unless there is an increase in resource management effectiveness, may simply lead to an increase in the area of irrigated agriculture, putting more pressure on biodiversity with little or no dry season water quality benefits.

107. Blockage to fish migration pathways will lead to severe impacts on many fish species. Many Mekong River fish species are known to migrate over long distances[79], and a number of migratory species travel to, or through, the Delta. Species which have their migrations blocked will potentially undergo major declines, with the size of the decline for each species depending on the proportion of the population which is no longer able to reach its breeding site.

108. The trapping of nutrient and sediment by dams can also cause dramatic changes to the downstream reaches of rivers. A reduction of sediment moving down the river may lead to erosion

at the seaward edge of the Delta, causing a loss of arable land. Trapping of nutrients by dams has risks both for agriculture and for fisheries within the Delta. The risk to agriculture arises from the loss of the nutrient replenishment to the soil which normally arises from the nutrients dispersed across the floodplain by the annual flood. As a consequence, farmers will increasingly have to purchase more fertilizers to maintain productivity. However the consequences may well be even greater for the coastal fishery[80]. Overall the consequences of Mekong Dams, and especially dams in the lower reaches of the river in Cambodia, are likely to be a loss of some fish species in the delta, and changes in abundance in many other species, with many being reduced and probably a few species increasing in abundance as a result of reduced competition.

109. As in the case of climate change, the threats posed by Mekong Dams are not directly addressable by the project. There is, however, the potential and need for the project to respond and adapt to their implications, for example through the restoration of coastal and riverside vegetation, in order to slow erosion resulting from reduced sediment load; and supporting productive options capable of tolerating increased salinity levels and reduced inputs of alluvial nutrients, and also of providing alternative livelihood support options for those members of the population (such as fishers) whose livelihoods may be affected by the impacts of Mekong Dams.

Urbanisation

110. Agricultural land is in turn undergoing conversion to other uses, resulting in large-scale loss of productive potential in this globally-important rice basket area. Although the MDR is defined as a focal area for agricultural production at national scale, the huge competition between provinces and cities to attract industry for economic growth has led to (or threatens to lead to) thousands of hectares along the Mekong and Bassac rivers, with first class agricultural soils, being turned into industrial zones. Nevertheless, only around 30-40% of the industrial zones are currently in operation, due to the lack of basic planning studies and cooperation between municipalities and provinces.

Socio-economic changes

111. In addition to environmental changes, Vietnam is also undergoing significant social and economic changes. Rapid urbanisation is impacting on agricultural production: growing cities are encroaching on farmland, which will lead to less space in future for food production, and high rural-urban migration (especially of young males) is leading to agricultural labour shortages (see paragraph 43). These two factors have the potential to impact significantly on Vietnam?s future food security; however labour shortages can also be a driver for the mechanization of agriculture.

112. Figure 14 shows the landscape-level dimensions of many of these threats, which connect different land units and actors across the landscape ? these can be classified as impact generating, transmitting and receiving units/actors respectively.

Figure 14. Landscape-level impact flows

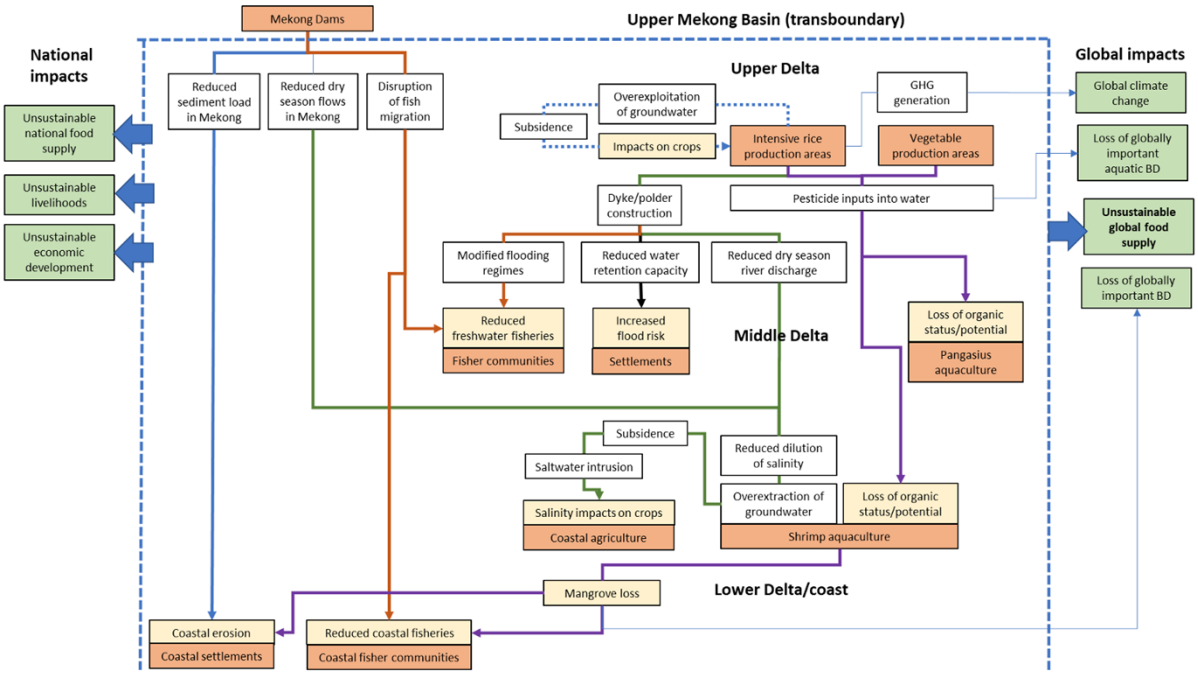


Table 3. Summary of landscape-wide impact flows

Impacted actor/landscape unit	Nature of impact	Origin of impact (responsible actor)
Coastal communities	Coastal recession and wave impact due to loss of mangroves and their EBA function	Expansion by **shrimp aquaculture operators** due to financial attractiveness
	Coastal recession due to reduced sediment load in Mekong system	Sediment trapping by **Mekong Basin dams (upstream countries)**
Coastal farmers	Salinity impact on crops due to reduced dry season freshwater inputs from the Mekong system	Dyke/polder construction by **upstream rice farmers** affecting dry season flows in the Mekong system
		Reduction of dry season river flows from **Mekong Basin dams (upstream countries)**
	Salinity impacts on crops due to subsidence and saltwater incursion, resulting from over-extraction of groundwater by shrimp farmers in response to salinity increases	Dyke/polder construction by **upstream rice farmers** affecting dry season flows in the Mekong system
		Reduction of dry season river flows from **Mekong Basin dams (upstream countries)**
Shrimp farmers	Salinity impacts due to reduced dry season freshwater inputs from the Mekong system	Dyke/polder construction by **upstream rice farmers**
		Reduction of dry season river flows from **Mekong Basin dams (upstream countries)**
	Loss of potential for organic status and markets due to pesticides entering from the Mekong system	Pesticide application by **upstream rice and vegetable farmers**
	Eutrophication impacts due to fertilizers entering from the Mekong system	Fertilizer application by **upstream rice and vegetable farmers**
Coastal fisheries	Decline in fish populations due to loss of mangroves	Expansion by **shrimp aquaculture operators** due to financial attractiveness

Impacted actor/landscape unit	Nature of impact	Origin of impact (responsible actor)
	Disruption of fish migration along the Mekong system	Obstacles to fish migration in **Mekong Basin dams (upstream countries)**
Pangasius aquaculture farmers	Loss of potential for organic status and markets due to pesticide levels	Pesticide application by **upstream rice and vegetable farmers**
	Eutrophication impacts due to fertilizers entering from the Mekong system	Fertilizer application by **upstream rice and vegetable farmers**
Floodplain settlements	Impacts on health, infrastructure and production from flooding	Reduced flood retention potential in upper delta due to dyke/polder construction by **upstream rice farmers**
Mekong system freshwater fishers	Reduced fish populations	Obstacles to fish migration in **Mekong Basin dams (upstream countries)**
		Modified river flow regimes due to dyke/polder construction by **upstream rice farmers**
		Pesticide application by **upstream rice and vegetable farmers**
		Reduction of dry season river flows from **Mekong Basin dams (upstream countries)**
Global community	Loss of globally important biodiversity including globally endangered species (e.g. Sarus crane)	Reduced habitat value and ecological functioning of wetlands (e.g. Tram Chim) due to modification of landscape-wide hydrological regimes for **upstream rice production**
	Reduced aquatic biodiversity including migratory fish	Pesticide and fertilizer application by **upstream rice and vegetable farmers**
		Modification of river flows by **Mekong Basin dams (upstream countries)** and **upstream rice production**
	Loss of mangroves	Expansion of **shrimp farms**
	GHG emissions	**Rice production** practices
	Loss of sustainability of global food supply due to coastal recession	Expansion by **shrimp aquaculture operators** due to financial attractiveness
		Sediment trapping by **Mekong Basin dams (upstream countries)**
	Salinity impact on crops due to reduced dry season freshwater inputs from the Mekong system, subsidence and saltwater incursion	Dyke/polder construction by **upstream rice farmers** affecting dry season flows
		Reduction of dry season river flows from **Mekong Basin dams (upstream countries)**

Table 4. Summary of impacts on global environmental values

Issue	Impacts

Biodiversity	- Modifications to water flows and flooding regimes across the rice production landscape, in order to permit intensive triple rice cropping, affect the ecology of remnant wetlands (such as Tram Chim) and fish populations (which are dependent on connectivity and include globally important and rare long-range Mekong migrants) - Excessive application and runoff of pesticides associated with intensive triple-cropping of rice, and fruit and vegetable production, pose risks to aquatic fauna - Expansion of shrimp farms and disruption of sediment flows associated with changes to flooding regimes results in loss of ecologically important coastal mangrove forests
Land degradation	- Excessive application and runoff of pesticides associated with intensive triple-cropping of rice, and fruit and vegetable production, threaten ecological functioning and productivity through the disruption of the natural interactions among biological components of farming systems; - Eutrophication due to excessive fertilizer use in agricultural production threatens the productive viability of aquaculture systems; - The degradation of natural ecosystems (e.g. wetlands, gallery forests, mangroves) threatens the ecosystem services on which productive sustainability and livelihoods depend; - The degradation and unsustainable extraction of aquifer water threaten the long term viability of production systems and livelihoods by jeopardising long term water availability and causing salinisation; - Modifications to flooding regimes threaten productive sustainability by limiting inputs of nutrient-rich alluvium;
Climate change (see paragraphs 87-90)	- Flooded rice production systems generate methane emissions - Open-burning of straw generates GHG and particulate emissions

Barriers

113. Resolution 120 and the Mekong Delta Master Plan (MDMP) establish principles and a route map for moving the rice-dominated landscapes of the Mekong Delta towards a condition of environmental, social and productive sustainability. This condition of sustainability requires productive activities in the Delta to be shifted towards alternatives (crops of management regimes) that are more resilient and less environmentally-damaging than those currently applied, while at the same time being attractive to farmers and able to meet their livelihood needs; flows of ecosystem services, on which farming systems, livelihoods and biodiversity depends, to be maintained or restored; and the interests of the region?s diverse stakeholder groups to be reconciled as equitably as possible.

114. At present there are a number of obstacles (barriers) to this situation being brought about: the project will specifically focus on addressing these, resulting in the attainment of the ?GEF alternative scenario? set out in Section 3 below.

1. Limited familiarity and experience with integrated approaches to land use planning

115. Despite the favourable policy and planning framework provided by Resolution 120 and the MDMP, the still **incipient levels of understanding of, and familiarity with, ILM among many policy makers and practitioners** constitute an obstacle to implementing it in practice. Due to the nature of the technical backgrounds of many stakeholders (Government officials and others), their narrow horizons of responsibility focused on their specific jurisdictions, and the narrow scope of the accountability frameworks to which they are required to respond, they are typically unaware of, and unequipped to take into account, the kinds of landscape-wide considerations (such as ecosystem service flows) which make ILM necessary.

116. A specific expression of this is the **limited degree of coordination and integration between environment and agriculture institutions** to date, which makes it difficult for the interrelations and interdependencies between these sectors to be addressed effectively and sustainably. This is of particular concern in the Delta, where agriculture is the predominant land use and also one the main sources of environmental impacts; while at the same time, agricultural sustainability there

depends on the maintenance of reliable flows of environmental services, through the conservation and/or restoration of ecosystems in an overall framework of well-managed landscapes. The above requires a synergistic relation between these two sectors: despite favourable policy signals and localised positive experiences, there is yet to be a transformational shift towards this situation.

117. Another issue to be resolved, if there is to be a transformational shift towards ILM, is the fact that despite the existence of a number of coordination structures linking stakeholders and administrative units located across the region (see Annex U), as yet **dialogue and coordination mechanisms lack the coherency, consistency and conceptual/strategic vision required for them effectively to support ILM**, reconciling the diverse needs and priorities of the different stakeholder groups located across the landscape and responding adequately to the complex biophysical, socioeconomic and productive realities of the region.

118. This situation is further compounded by policy makers? and practitioners? **difficulties in accessing, interpreting and responding effectively to reliable and relevant information** on biophysical, socioeconomic and productive conditions in their areas of influence, and using it to guide decision-making. Information is typically sector-specific (focused separately on issues of productivity, environmental values and threats, and socieconomic conditions), and fails to cover landscape-level or longer-term processes, or interrelations among sectors ? for example the indirect or cumulative impacts of productive alternatives on environmental values and sustainability.

119. **Monitoring systems are still inadequately developed, and too narrow in scope**, to allow decision-makers to respond adaptively to information on evolving conditions in their areas of influence, or to emerging evidence of the effectiveness of their interventions (through iterative results-based management). Monitoring is again typically limited in scope and compartmentalized by sectors, whereas effective ILM needs to respond adaptively to evolving conditions and interactions at multiple levels, from field through to landscape, as well as along value chains.

120. A further challenge for decision-makers, which they are as yet inadequately equipped to address, is to define how to arrive at objective and equitable trade-offs between the diverse kinds of impacts that may arise from alternative courses of action ? for example between short term considerations of productivity and longer term considerations of environmental sustainability, and beteween the interests of different stakeholders in the landscape. The required **tools for economic valuation and decision support are still unavailable** to most decision-makers.

2. Inadequate capacities and incentives for managing farming systems sustainably

121. ***Limitations of extension services:*** although public agriculture extension systems have extensive coverage and provide much training to farmers (see paragraphs 27-36), this does not generally translate into commensurate levels of technology adoption by farmers, or corresponding impacts on resource management at farm level: farmers often participate in training and demonstrations to receive short term benefits such as incentives and subsidies. A major obstacle to farmer?s uptake of, and investment in, new technologies following training is their typically **high levels of aversion to risk**, in particular **uncertainty regarding the availability and reliability of markets** for the products of non-conventional cropping or management practices (such as those that may be capable of delivering environmental benefits and long-term sustainability).

122. **Public extension services lack the mandate and capacities to support farmers in identifying and interacting with markets** for the products of such non-conventional cropping and management systems. This gap is to some extent filled by private sector actors (for example through companies? support to their contract farmers) and NGOs, and there are significant levels of interest among major private sector partners such as Olam in supporting productive sustainability amon the farmers from whom they source: however both **public and private sector extension agents typically lack the necessary levels of exposure to, and integrated technical and conceptual knowledge of, cropping and management alternatives** that combine social and productive viability, market reliability, economic attractiveness, sustainability and the capacity to deliver environmental benefits.

123. These gaps are partly related to the limitations in overall experience with concepts of ILM and productive sustainability, and in information flow, referred to under Barrier 1 above: there is as yet **inadequate inter-sector integration** to ensure that issues of productivity and sustainability are addressed in an integrated and balanced manner in extension systems; there is **inadequate access to knowledge on attractive and sustainable alternatives** in extension agencies; and **monitoring**

mechanisms are insufficient to track effectively the progress and impacts of the implementation of management practices promoted through extension programmes.

124. ***Limited development of conditions to ensure farmers? access to the inputs required for sustainable production.*** The sustained uptake of practices that combine attractiveness to farmers with the potential for environmental sustainability depends not only on ?one-off? injections of technical knowledge and capacities, but also on farmers having the ability to continue to access knowledge and material and financial resources in the long term, in accordance with their evolving needs and conditions. There has been significant progress with the establishment and strengthening of farmer organizations, especially cooperatives, in the Delta Region (as elsewhere in Vietnam): as yet, however, generally **farmer organizations are not adequately prepared** to respond to the additional challenges of undertaking environmentally sustainable management and participating in green value chains. Green value chains present opportunities, in the form of attractive and secure market access and the availability of technical support by corporations committed to sustainable sourcing; they also, however, require farmers to satisfy the requirements of established sustainability standards (such as SRP, Organic, GlobalGAP, VietGAP or corporations? own standards) and to ensure consistency in terms of quantity and quality of produce. **Farmer organizations in the target area are typically focused on conventional options** for agricultural production and farm management, but **lack the expertise, mechanisms and experience** required to support their farmers in identifying green value chain opportunities, interacting with value chain actors offering such opportunities, defining the technical, material and financial assistance that their members need in order to be able to meet green value chain requirements, and optimize the equitable distribution of benefits from such opportunities among their members.

125. ***Constraints to the functioning of the Large Field Model (LFM):*** as mentioned above, the LFM has much potential as the basis for sustainable production and green value chain linkages, but it has shown a significant downturn in terms of area in recent years. Factors which have contributed to this decline include the following:

- ? **Limited access to capital**, which affects companies? abilities to engage in large scale contract farming arrangements: the highly seasonal nature of rice exacerbates this limitation, as it means that investment in purchasing farmers? crops tends to be required in a highly concentrated peak over the one- or two-month harvesting period. Added to this are needs for investment in storage facilities, transportation vehicles, drying machines needed for companies to meet their commitments under the LFM and to maintain the quality standards of green value chains.
- ? **Unstable markets for rice**, which make it difficult for companies to plan their procurement and their input supply, which in turn reduces their willingness to sign contracts with farmers: in some cases (for example in early 2019), declining demand has meant that businesses have found themselves unable to afford to buy farmers? paddy, and as a results they have had to break their contracts.

? **Lack of clarity, trust and information in pricing and contractual arrangements**, which undermine the willingness of farmers and companies to enter into contract agreements. For example, initially farmers and companies typically agree to set a floating price for rice based on the market price at the time of harvest, but lack of a clear definition of ?market price?; farmers may consider the inputs provided by companies to be overpriced (although they may be unfairly comparing authentic, high quality inputs provided by the companies with cheaper, low quality and/or fake products available on the open market); farmers may mistrust the quality tests carried out by the companies on their products; and there are inadequate sanctions on breaches of contract by either side

126. ***Limited advantage is taken of opportunities for private sector involvement, market leverage of environmental sustainability, and green value chains***, despite the significant and growing interest in sustainable sourcing among many private sector actors, incuding both national companies and multi-national corporations.

127. At present, **actions in support of sustainable production and value chains suffer from being piecemeal and fragmented**, both horizontally and vertically. Private sector initiatives lack effective and consistent coordination with public sector actors, which is essential if the transition towards productive sustainability aimed for under Resolution 120 is to be achieved in an effective, efficient and durable manner. This situation also means that opportunities for synergy are missed: for example, private sector support to farmers does not effectively complement public sector technical and financial support; nor is it assured that the geographical and thematic focus of private

sector sourcing and farmer support will reflect adequately the priorities set out in the policy and planning frameworks defined by Government, at different levels ? which is of particular importance in relation to the need for coordinated and consistent integrated landscape management. Limited coordination among value chain actors also risks perpetuating a situation where green value chains based on sustainable production and improved product quality remain the exception rather than the rule, and where the Mekong Delta rice sector as a whole continues to be dominated by low quality, low value rice ? and for this to continue to be its image on the regional and global stage, to the detriment of all its value chain actors.

128. The effective and sustained functioning of green value chains, as leverage for the generation of farmer benefits, environmental sustainability, and attainment of corporate sustainability objectives, is still constrained by the **limited scale of adoption of workable, relevant and consistent standards for environmental sustainability** in production systems. The SRP Standard has been piloted since in 2017, with positive results (including efficient input management and product quality improvement), but it is as yet to be widely rolled out through public or private extension programmes. Although the requirements of the SRP Standard are pragmatically-based and relatively attainable, compliance does require farmers to have not only the technical knowledge and capacities that can be provided by extension systems, but also access to information, inputs, technical equipment and mechanisation (Box 16): to date mechanisms have not been put into place in a concerted and widespread manner to provide farmers with access to these different elements, allowing them to ?join up the dots? and thereby become compliant with SRP criteria. Also lacking to date has been the tailoring of the broad requirements of the SRP Standard (see Table 4) to local conditions, in order to maximize its relevance to farmers? needs and conditions (and thereby its attractiveness to them) and its ability to maximize productivity and sustainability benefits.

129. The widespread application of sustainability standards is also hindered by **limitations in farmers? access to information** on the pros and cons of alternative sustainability standards (e.g. SRP Standard, Organic and GlobalGAP) and how to comply with them, and the opportunities that exist for accessing attractive green value chains; while limited coordination and information flow along the value chain constitutes an obstacle to ensuring effective traceability and compliance with sustainability standards, the consolidation of relations of trust among value chain actors, and the attainment of a sector-wide transformational change towards sustainability.

130. Although widely recognised, promoted and accepted in the project area, the degree of **market insertion of the SRP standards is still limited** to date, compared to standards such as Global GAP and VietGAP which have long presence in Vietnam, and have been widely promoted. This is in part attributable to the limited development to date of collaborative relations among farmers, and between farmers and private sector actors, which are needed to ensure the consistency of supply volumes, quality and branding that are required for widespread and sustained market insertion.

3. Incipient development of frameworks for coordinated planning, incentives and investments in ecosystem restoration

131. One of the central elements of the concept of integrated landscape management (ILM) is the maintenance and/or restoration of the processes whereby the ecosystem flows, on which productive sustainability ultimately depends, are generated. A core challenge is to move away from **small-scale, piecemeal investments in ecosystem management and restoration** to approaches that accurately and effectively respond to the nature and spatial configuration of ecosystem service flows. The **limited levels of coordination and consistency between environment and agriculture sector actors** in relation to ILM in general, described above, also applies specifically to the prioritisation, planning and implementation of ecosystem restoration. This typically leads to a **limited understanding of ecosystem restoration** as referring to natural or semi-natural landscape elements such as mangroves, wetlands and forest areas; whereas in reality, as shown in Figure 14, there are multi-directional and multi-dimensional flows of ecosystem services between agricultural and non-agricultural landscape elements, that need to be viewed and addressed through an inter-sector lens.

132. Also **lacking at present are management instruments, and planning and dialogue mechanisms** that adequately provide for the multi-dimensional, inter-sector and multi-stakeholder nature of effective ecosystem restoration, in accordance with ILM principles.

133. Although there is a favourable policy and regulatory framework (see Box 17), **experience in practice with the sustainable financing of ecosystem restoration and maintenance is still**

limited. Key gaps that need to be resolved, on which the functioning of sustainable financing mechanisms for restoration depends, include: **limited levels of understanding of the nature and value of the ecosystem service and impact flows**, that are expected to be addressed through restoration; **limited knowledge of the feasibility of alternative options** for ecosystem management and restoration in different contexts (ranging from agricultural production systems through to natural or semi-natural ecosystems); and **limited clarity on how financing for restoration would be channelled and used** among institutional and social stakeholders, and the **roles of different public and private sector actors** in implementing and supporting such mechanisms.

2) The baseline scenario and any associated baseline projects.

134. Under the baseline scenario, there will be a progressive transition, in response to Government policy as expressed under Resolution 120 and the Mekong Delta Master Plan, away from the unsustainable intensive rice production systems that currently dominate most of the Mekong Delta landscape (and which involve major modifications to floodplain hydrology together with widespread use of harmful agricultural chemicals), towards increased diversification into alternative cropping options, and, in areas where three rice crops are currently produced per year, a reduction to two. This transition is aimed at improving the sustainability of the management of the Mekong Delta in response to Government recognition of the severe environmental problems that current production and management regimes are causing.

135. Under this baseline scenario, there is a risk that:

- **Productive alternatives that replace rice production (or at least substitute the third rice crop) will have negative environmental impacts of their own** ? such as increased chemical pesticide use in vegetable production;

- Investments focused specifically on resilience will **fail to take opportunities to deliver other forms of environmental benefits**, such as the conservation and sustainable management of biodiversity, or net GHG emissions reductions, and may in some cases generate negative impacts (for example the potential **impacts of water management infrastructure on migratory fish**);

- **Opportunities may be missed to work proactively with ecosystem components** to deliver environmental, productive and resilience benefits through nature-based solutions;

- Investments in natural resource management and productive sustainability will **fail adequately and effectively to address landscape-wide flows of impacts and ecosystem services**, with the result that the costs and benefits associated with management regimes may be inequitably distributed across the landscape, leading to social unsustainability.

136. GEF-7 resources will be used in an incremental manner to address these risks, building on, complementing and enriching a large and solid portfolio of baseline investments by the GoV and a wide range of cooperation agencies and NGOs (described in detail in Annex V), through strategic and operational partnerships, thereby jointly creating the conditions for the implementation of integrated and durable approaches to managing rice landscapes in the Mekong Delta. This baseline portfolio covers a range of issues of direct relevance to the GEF-7 FOLUR project, as described below.

Private sector partnerships:

137. The large number of existing public and private sector partnerships (PPPs) show that there is commitment in the private sector to pursue sustainability objectives and to partner with public sector entities, farmer organizations and funding agencies. This will provide a solid base for the work of the project in strengthening, consolidating and integrating networks of public/private value chain actors, especially under Output 2.2.1. These initiatives also provide a source of experiences that the project will incorporate as relevant (subject to further updated review at project inception), of practical and methodological approaches to promoting sustainable value chains through PPPs and multi-stakeholder approaches. The project will in turn complement and benefit these baseline initiatives through supporting frameworks of integrated landscape management (ILM), that will help to optimise their sustainability and broader impacts. These initiatives include the following:

- The **Partnership for Sustainable Agriculture in Vietnam (PSAV):** this focuses on connecting actors in the agricultural sector to share experiences and jointly develop value chains of key agricultural products through public-private partnerships (PPP), and, in consultation and

coordination with MARD, the project will take advantage of PSAV to explore and negotiate further relations in addition to those already confirmed (in the co-financing letters from Olam and Loc Troi). The **PSAV Public Private Partnership (PPP) Task Force on Rice** was launched by MARD in November 2017, and aims to promote the sustainable development of the rice sector, improve rice quality and improve farmers? livelihoods.

- The **Gender Transformative and Responsible Agribusiness Investments in South East Asia (GRAISEA)** programme in Vietnam: implemented by Oxfam with support from the Government of Sweden, this has applied a multi-stakeholder approach to facilitate cooperation, shared benefits, and responsibilities to promote a sustainable rice value chain in the Vietnam, from which the project will draw lessons during implementation. Oxfam has brokered and facilitated fair farming contracts between these producer groups and Gentraco (a leading rice company in Mekong Delta).

- The **Development of Sustainable and Inclusive Rice Value Chain for smallholder producers in Vietnam** programme: Phoenix Global Group (a global rice trading company) and Loc Troi (the largest rice corporation in Vietnam, and a significant source of co-financing for this project) are working with Rikolto and the Dong Thap Department of Agriculture and Rural Development to link smallholder farmers to national and global value chains for sustainable rice products: this will directly contribute to the consolidation and scaling out of the value chain-based model promoted by the project.

- The **Green Innovation Centres (GICs):** to be supported by GIZ from 2020 on, these constitute a major part of GIZ co-financing to the project. There will be close relations between the project and the GICs, which will directly complement GEF investments by promoting innovations (including ICT and digitalization) along the value chain, as well as value-adding processes; developing the capacities of rice farmers and their associations to adopt Sustainable Irce Platform (SRP) climate-smart best practices; and strengthening linkages along the value chain including market access (and farmer-miller & miller-exporter agreements and contracts) through close cooperation with national and international private sector partnerships.

- The **GIZ-BRIA II/Market-oriented Smallholder Value Chains Project (MSVC):** this is a Public-Private Partnership (PPP) project between German Federal Ministry of Economic Cooperation and Development (BMZ) and Olam International Ltd, implemented in Indonesia, Thailand and Vietnam from 2018 to 2022. It accounts for the remainder of the GIZ co-financing to the project: it will directly complement GEF investments as its PPP approach will create a pulling effect in farmer adoption of sustainable practices and technology as well as better organization and management of farmer groups, which is fundamental for long-term sustainability in product value chains.

- The **SNV MAM-II** project is working with the Minh Phu Seafood Corporation, (one of the world?s largest shrimp processing companies) to develop an ?organic coast? along the whole coastline of the Mekong Delta, with organically-certified integrated mangrove/shrimp systems (and at least 50% mangrove cover) to facilitate access to EU markets offering price premia for sustainable organic production. This ?organic coast? model is directly compatible with and complementary to the proposed GEF approach, which will feature the application of ILM at a broader (Delta-wide) landscape level: and the GEF project will coordinate with and build upon the SNV-supported initiative with this in mind.

138. The GEF-7 project will build on these existing relations, further developing linkages with regional platforms such as the SRP. It will work with private sector actors as channels for the leverage of broad scaling out of integrated approaches to rice landscape management; help improve the technical models promoted by private sector actors to include the integrated generation of resilience benefits and GEBs; and support sector-wide dialogue between public and private actors to address sustainability issues in effective and harmonized ways, within the framework of national and local planning frameworks.

Support to climate-smart and sustainable production systems

139. There is currently a strong focus of baseline investments on climate change adaptation and resilience in the Delta: the GEF-7 project will build on and complement this, seeking to promote a move towards approaches that consider climate change adaptation, resilience, the delivery of global environmental benefits, food system sustainability, livelihood diversification, food security and sustainable economic development in an integrated manner, within the framework of integrated landscape management. These baseline initiatives include the following:

- The **extension systems of provincial-level Departments for Agriculture and Rural Development (DARD)** (see paragraphs 28-31). DARDs in the target provinces will constitute key project partners, as participants in the co-definition of sustainable production models, targets for capacity development (under Output 2.1.1) and knowledge, and as channels for the scaling out of the sustainable production models through their extension systems under Outcome 2.1.

- The **AgResults Vietnam Greenhouse Gas Emissions Reduction Pilot (AVERP)**, which uses prize money to identify novel approaches that reduce greenhouse gas emissions, increase rice yields and help overcome market barriers to scaling. The project targets smallholder farmers, input providers, aggregators, universities and research institutions, government officials, cooperatives, non-governmental organizations, and development agencies who have the potential to have significant impact on greenhouse gas emissions. AVERP thereby constitutes an important potential source of inputs to the project regarding options for sustainable production and management, under Outcome 2.1

- The **Paddy Rice Component of the Climate and Clean Air Coalition's (CCAC) Agriculture Initiative** aims to implement the alternate wetting and drying (AWD) technology at large scale in Vietnam and Bangladesh, to reduce CH_4 emissions from rice fields. The programme aims to address major constraints to mitigation in paddy rice by identifying (1) best management practices that achieve both mitigation and food security and (2) incentives, technical support mechanisms, and enabling conditions to overcome the barriers that men and women farmers face in using new practices. Based on these assessments, the Paddy Rice Component will produce technical and policy guidance for national governments to implement greenhouse gas (GHG) mitigation options at large scales. The project will maintain close communication with the CCAC Agriclulture Initiative as a source of information on sustainable options for production and management, to be promoted under Outcome 2.1.

- The proposed **GIZ/GCF project Climate and Disaster Resilient Land use and Water Management in the Mekong Delta** will support the implementation of climate and disaster resilient farm technologies, practices and approaches in coastal zones. With rice, this will include scaling up the use of salt-tolerant varieties, AWD, and floating rice as an adaptation to flooding; it will also support a transformation from mono-based shrimp cultivation to a more adaptive polyculture-based aquaculture of multiple fish and shrimp species in response to changes in the brackish water environment along the coast and increasing salinity. This will complement the GEF project, by directly promoting options for sustainable production, and generating field-level lessons with potential for scaling out more broadly across the Delta, including in the provinces directly targeted by the project (although the GIZ/GCF focus is more specifically on climate and disaster resilience, there is potential for adjustment to generate broader environmental benefits)

- The **Green Innovation Centres** initiative of GIZ will also include capacity development of at least 20,000 rice farmers and their associations to adopt the SRP climate-smart best practices and comply with the SRP standard. It also strengthens innovative value chains for rice straw-derived products, supported by IRRI. The GICs will thereby directly complement the GEF investment by contributing to the area under SRP compliance, while the GEF project will complement the GIZ/GIC approach by supporting encompassing ILM frameworks for field level options.

- The **SNV MAM-II project** is training 5,000 shrimp farmer households along the coast in applying integrated mangrove-shrimp farming practices: this constitutes a direct, geographically localised complement to the GEF investment, which will seek to link integrated coastal zone management (ICZM) with integrated landscape management (ILM) that also addresses flows of ecosystem services between coastal areas and elements of the broader landscape further inland.

- The **Irrigated Rice Research Consortium (IRRC)** led by IRRI in collaboration with the National Agricultural Research and Extension Systems (NARES) promotes the ?Three Reductions, Three Gains (3R3G)? and the ?One Must Do, Five Reduction (1M5R)? integrated technology packages in order to reduce production costs, improve farmer health, and protect the environment in irrigated rice production. Under Outcome 4.2, the project will facilitate the flow of knowledge and information with the IRRC, regarding sustainable options for management and production, taking advantage of the technical capacities of IRRC and also seeking to communicate lessons on the integration of multiple environmental considerations into the models promoted by IRRC.

Ecosystem-based adaptation and resilience

140. The significant baseline investments in adaptation and resilience will help to ?climate-proof? the GEF-7 investments against the CC impacts described in the previous section. These initiatives

also constitute a baseline to the GEF-7 project, incremental support from which will help to ensure that such initiatives are implemented within a framework of integrated landscape management, in such a way as to optimize their effectiveness in safeguarding flows of ecosystem services (such as CC resilience) in benefit of production systems and rural communities. These baseline initiatives will therefore complement with the investments of the project in conservation and restoration, under Component 3, which will be coordinated with them, while communication and knowledge flow with them will be supported under Component 4. They include the following,

- The World Bank-funded **Mekong Delta Integrated Climate Resilience and Sustainable Livelihoods (ICRSL),** delivered through MARD, includes a number of infrastructure-focused investments in CC resilience, including enhancement of flood drainage capacities, water management, sustainable livelihoods, restructuring of production suitable to ecological conditions, prevention of coastal erosion and protection and development of ecological forest. The project includes also components implemented through MoNRE, including the monitoring of surface water and groundwater resources and of riverbank and coastal changes under climate change. World Bank funding to the ICRSL is complemented by **GEF-funded project 9265 (GEF-AF-Mekong Delta Integrated Climate Resilience and Sustainable Livelihoods Project)**, which complement the WB investments by helping to strengthen policy research capacity and evidence-based decision making for climate change mitigation, sustainable land and forest management, and financing innovative practices that promote climate-smart and climate resilient livelihoods and ecological-based adaptations.

- The **Transforming the Mekong Delta GCF Program for Vietnam** (for which a concept note is currently under formulation by the World Bank) has the objective of scaling up the transition of small-holder farmers to climate resilient livelihoods and strengthening their participation in flood-based value chains.

- The **GIZ Mekong Delta Climate Resilience Program (MCRP)** is supporting the establishment of an institutional framework for the regional coordination of climate-resilient development, as well as providing policy, planning and technical advice, and training measures for government officials and others, designing feasibility studies and testing technologies and solutions (such as sustainable value chains for resilient productive alternatives), supporting inter-provincial land and water management and coastal protection.

- The proposed GCF project on **Climate and Disaster Resilient Land use and Water Management in the Mekong Delta**, submitted by GIZ, proposes integrated coastal protection focusing on ecosystem-based solutions combined with infrastructural measures. Project activities will include the nursing of suitable mangrove species, the reformation of tidal mudflats and the use of multi-species plantations to rehabilitate the mangrove belt and maintain its ecosystem services, together with dyke upgrade and rehabilitation. The project will also support the development and implementation of a Regional Coordination Mechanism for climate and disaster resilience: capacity development for government officials working on regional coordination will enhance the mechanism.

- The **SNV Mangroves and Markets project (Scaling up Ecosystem-Based Adaptation in the Mekong Delta - MAM-II, 2016-2020)**, funded by the German Ministry for the Environment, supports mangrove restoration and protection in the Mekong Delta, while strengthening the livelihoods and resilience of smallholder shrimp farmers and their families.

- The third phase of the **World Bank Integrated Water Resource Management (IWRM)** project, in Cambodia and Viet Nam, includes investments in partnership with the MRC in five transboundary dialogue projects in the lower Mekong basin, which include one between Viet Nam and Cambodia focusing on river bank erosion, salinity intrusion, flooding (major focus), and sluice gate management. Data sharing is a core goal of this transboundary initiative and a Joint Committee has been formed.

- The **International Rice Research Institute (IRRI)** has developed climate-risk maps for the Delta within the CCAFS program, which identify salinity and flood risk areas and are for example used to adjust cropping calendars in coastal areas and the upper delta.

Water management

141. Baseline investments in water management will similarly complement GEF-7 investments, providing a base on which to build, helping directly to address some of the water-related issues that currently pose threats to the effectiveness of the GEF-7 project, and providing the opportunity for

further leverage of environmental benefits through the mainstreaming into them of FOLUR principles of sustainable food systems and ILM. These baseline investments include the following:

- The JICA **Ben Tre Water Management Project**, which aims to prevent salinity water intrusion and ensure water distribution with adequate salinity level by constructing water sluices and related facilities.

- Investments by MARD in **water management infrastructure projects**, including Tr? S? sluice, Ninh Qu?i shiplock combined sluice, Xu?n H?a pumping station and sluice, and the dredging of the M?y Ph?p - Ng? H?u canals. Additionally, substantial investments are being deployed to improve irrigation schemes in Nam B?n Tre, C? Mau, and C?i L?n ? C?i B?.

- The NOW-funded project **Rise and Fall: Strategies for a subsiding and urbanizing Mekong Delta (Vietnam)**, which has a strong focus on improved groundwater modelling and salinity intrusion.

- The BMBF-funded project **ViWAT** aims is to design and implement water management and land use change strategies, erosion control, land reclamation, and improved (ground)water and land subsidence monitoring, as well as local water and environmental services.

- The BMBF **Catch Mekong** project on salinity intrusion and sediment deposition in the Delta aims to fill data gaps regarding water availability, saltwater intrusion, land use, river morphology, and coastal erosion.

142. **The GEF International Waters (IW) project on Enhancing sustainability of the Transboundary Cambodia - Mekong River Delta Aquifer is currently in its preparation phase and is expected to be endorsed one year after this project.** The IW project, which will focus principally on groundwater management, will complement this project by helping to address transboundary issues that affect water availability and quality in the Mekong Delta; it will contribute water-related data in support of ILM; it will include pilots of water and ecosystem management, the results of which will be of relevance to the problems addressed by this project.

Financing mechanisms for sustainability and resilience

143. Baseline investments in support of financing mechanisms will help to ensure that the financial sustainability needs of the production, management and restoration alternatives proposed through the GEF-7 FOLUR project are met, as a complement to project investments under Outputs 2.1.3 and 3.1.3. Partnerships between the FOLUR project and these baseline initiatives will also provide opportunities for leverage of environmental benefits, by supporting the incorporation into these initiatives (or into the subsequent application by national institutions of the models that they promote) of the FOLUR principles of the integration of sustainable food systems and sustainable land management. These baseline investments include the following:

- The UNEP/ Rabobank global **Forest Protection and Sustainable Agriculture partnership**, which aims to unlock at least USD 1 billion in finance towards deforestation-free, sustainable agriculture and land use. The AGRI-3 Fund has been created to catalyse private financial resources for this initiative.

- The **Dutch Fund for Climate & Development (DFCD)**, a new global partnership between the Dutch development bank FMO, Climate Fund Managers (CFM), World Wildlife Fund Netherlands (WWF) and Netherlands Development Organisation (SNV), will be providing finance and Technical Assistance (TA) to projects with a focus on climate change adaptation.

- The proposed GIZ/GCF project on **Climate and Disaster Resilient Land use and Water Management in the Mekong Delta** will support the preparation of the Mekong Delta Investment Plan for Climate Resilience and Disaster Risk Reduction, together with capacity development of the main stakeholders tasked with the identification of appropriate investments and the development of the investment plan.

- The **SNV MAM-II project** is working on mainstreaming payments for environmental services (PES) for sustainable mangrove-shrimp aquaculture into national and provincial development plans and supporting the building of a local PES policy in aquaculture.

Information management

144. The ICRSL project will also invest in building the Mekong Delta Centre to integrate regional natural resources and environmental data to analyze, evaluate and support decision-making on sustainable development in the context of climate change; the centre, which is scheduled to be

complete by 2022, will provide scientific evidence, contributing to assisting regional authorities in restructuring agriculture, bettering the quality of water resources and infrastructure systems, and developing appropriate livelihood models.

3) The proposed alternative scenario

Theory of change

145. The project responds to the recognition of concerns by the Government of Vietnam about the sustainability and resilience of the rice sector in the MDR, which is currently characterised by intensive high-input multiple cropping: this has led to the Government setting a target of reducing rice production in the Delta by more than 25% by the year 2030 (see paragraph 60), associated with reductions in management intensity and diversification into other crops.

146. Under the baseline scenario, there is a risk that the potential for these changes to improve environmental sustainability will not be realized: some of the possible alternatives to rice in fact have the potential to generate greater negative environmental impacts than rice itself (as explained in paragraph 79, for example, vegetable and fruit production typically involves significantly higher levels of pesticide use than rice).

147. Central to the theory of change of the project is therefore ***the transformation of rice-dominated landscapes in the Mekong Delta towards sustainable, adaptive and resilient models of production and landscape management that deliver multiple environmental and social benefits***. This constitutes the project objective.

148. Key elements of the ILM model that is central to the ToC are summarized in Box 4:

Box 4. Key characteristics and elements of the proposed ILM model:

- An **inter-sector approach**, which recognises that the Mekong Delta is overall a highly anthropogenic production landscape, where most environmental issues are related directly or indirectly to agricultural activities, which in turn depend for their sustainability on sound environmental management of the landscape and its ecosystems;

- The **integration and coordination of agricultural production systems (and other productive activities) with the sustainable management, conservation and restoration of other landscape elements**, especially natural ecosystems that contain important environmental values and/or generate ecosystem services of importance for productive sustainability, livelihoods and human health. This reflects the multiple and complex interrelations between these different landscape elements, as portrayed in Figure 14 and Table 3;

- **An integrated agroecological approach**[81]6 **working at multiple concentric levels** from field through landscape up to programmatic level, and **integrating landscape and jurisdictional approaches**, to recognise the diverse dimensions in which environmental and social processes occur and decisions are taken;

- The integration of **diverse dimensions of food systems**: i) the longitudinal value chain dimension linking inputs through farm to the eventual consumer and ii) the farm family focus recognising the multiple interdependent elements of farming and livelihood systems (including food production for consumption, cash cropping and non-agricultural income);

- **Multi-level adaptive management**: the project will support effective adaptive management by applying frameworks for planning and monitoring, and corresponding indicators, tailored to issues and needs relevant at different concentric management levels (see Output 4.2).

- **Evidence-based, inclusive decision-making and planning**, that reflect and respond to spatial variations in conditions and spatial flows of impacts, services and ecosystem functions across the MDR landscape, and aim to achieve equitable balance and where possible synergies between different objectives (including resilience, environmental protection, livelihood sustainability, income generation and food security) and the needs of different stakeholders;

- The application where possible of ?**nature-based solutions**? as typically low-cost and sustainable alternatives for working with ecosystems in the target landscapes to maintain flows of ecosystem services, compared to more conventional approaches based on infrastructure and exogenous technologies. NBS solutions have greater potential for reconciling the objectives of protecting environmental values and promoting productive sustainability and resilience (please see Annex AA for additional information on how the NBS approach relates to the threats identified in the previous section)[82]7.

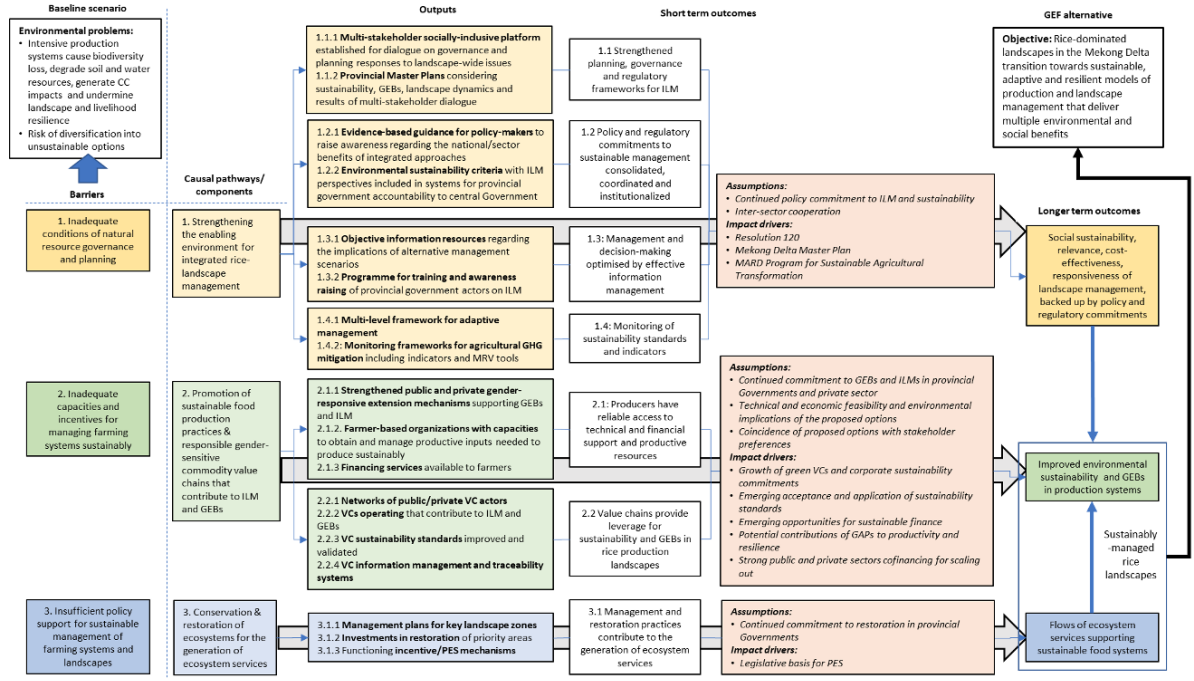
- The realization of the **potential of value chains to exercise positive leverage** on the delivery of environmental sustainability benefits, making it ?worth farmers? while? to produce in environmentally sustainable ways. This is supported by strong public/private collaboration: the involvement of both national companies and multinational corporations will increase the number of value chain entry points, spread risk and maximize national ownership and therefore sustainability.

149. In support of this change, GEF resources will be used in a highly targeted, incremental and complementary manner, to develop lasting capacities, systems and instruments among Government entities (at national and provincial levels), local communities (including producers) and their institutions, and private sector actors, to implement and sustain an adaptive model of integrated landscape management (ILM), responding appropriately to future trends in factors such as climate, demography and markets. The resulting landscape model will be characterised by diverse crops and production systems selected on the basis of their sustainability, resilience, and ability to optimize global environmental benefits, complemented by functioning and resilient natural and productive ecosystems able to generate the environmental services on which

sustainable food systems depend. The incremental logic underpinning this approach is described in more detail in paragraph 284 and Annex W below.

150. GEF support will initially be focused on five selected provinces (see Figure 2) adjoining the Mekong river and its branches (distributaries), stretching at the upstream (northern) limit from the border with Cambodia as far as the coast in the south. The theory of change has a long-term goal that the ILM model initiated in those provinces will eventually be applied across the whole of the Mekong Delta region, and as detailed in Box 9 the five initial provinces have been selected largely with the aim of maximizing that scaling out effect.

Figure 15. Project theory of change



151. The project will adopt a multi-pronged approach, as a pragmatic response to the context and the multiple facets of sustainability. The change aspired to through the project will be achieved through three main interrelated causal pathways, portrayed in Figure 15. These correspond to the three main components of the project.

152. ***Causal pathway 1*** (Component 1) involves **Strengthening the enabling environment for integrated rice-landscape management**. This is essential in order to ensure that the proposed model of landscape management is socially sustainable, relevant, cost-effective, responsive to future changes in climatic, economic, demographic and other conditions, and sustained by durable policy and regulatory commitments.

- The **social sustainability** of the model will be be ensured through the multi-stakeholder dialogues to be supported under Output 1.1.1;

- The **relevance and cost-effectiveness** of the elements that make up the landscape management model will be promoted by providing planners and decision-makers with reliable information, and raising their awareness, regarding the implications of alternative management scenarios (Outputs 1.3.1 and 1.3.2);

- The **relevance and responsiveness** of the model will be further ensured through the provision of monitoring frameworks to track effectiveness and changes in conditions (Output 1.4.2), and adaptive planning instruments to orient the implementation of the model in response to spatial and temporal variations in needs and conditions (the Provincial Master Plans under Output 1.1.2 and the multi-level framework for adaptive management under Output 1.4.1);

- The **long-term sustainability and replicability** of the model will be supported by raising awareness of its benefits among policy formulators in central Government (Output 1.2.1) and by

promoting the incorporation of environmental sustainabity criteria as measures of performance in accountability mechanisms (Output 1.2.2).

153. The effective functioning of this causal pathway is dependent on there being continued policy commitment to ILM and sustainability. Prospects for this assumption being realized are good given the existence of a number of important impact drivers, in the form of firm and explicit policy and planning instruments to which the Government has committed, all of which support the key elements of the proposed model. These policy impact drivers are as follows:

- **Resolution 120 on Sustainable and Climate-Resilient Development in the Mekong Delta** (see paragraph 50), which includes provision for the transformation of the development model based on ecological system[s], in harmony with natural conditions, biodiversity, culture and people, and natural rules. This **supports the inter-sector nature of the project**, featuring close collaboration and integration of effort between MONRE (head of the natural resources and environment sector) and the Ministry of Agriculture and Rural Development (MARD), represented by the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD).

- The draft **Mekong Delta Master Plan**, which is expected to be approved by the end of 2020 (outlined in Annex T) and the development by provinces in the Delta of their Master Plans (MP) in coherence with the rice restructuring plan: these MPs will consider sustainability, climate change, ecosystem services, and include a spatial component. This is an important opportunity to provide concrete recommendations on how to integrate considerations of sustainable integrated landscape management into the formulation and implementation of these planning instruments.

- The MARD **Program for Sustainable Agricultural Transformation (PSAT)** (paragraph 58) is also supportive of the transition foreseen in the ToC, prioritizing for example climate-smart agriculture, no-regret approaches, a structural commodity change from a ?rice first? policy to ?aquaculture ? horticulture ? rice?, and inter-provincial and landscape approaches.

154. ***Causal pathway 2*** (Component 2) involves the **Promotion of sustainable food production practices and responsible gender-sensitive commodity value chains that contribute to ILM and GEBs.** This is the core pathway of the project, that will result in the generation of concrete environmental benefits on the ground through a shift away from the current unsustainable practices towards sustainable alternatives, while avoiding the risk of an environmentally harmful alternative scenario involving diversification into unsustainable alternatives.

155. In order to change **farmers? behaviour** towards sustainable production practices, the project will ensure that the conditions exist to enable them to do so:

- Farmers? **long term technical capacities to apply sustainable practices** will be ensured through the strengthening and orientation of the extension mechanisms that serve them (Output 2.1.1). This support will focus on mainstreaming aspects of environmental sustainability into the messages of these extension systems, moving away from the current narrow focus on productivity issues. This will complement the direct provision of technical support using project resources, and will help to ensure that farmers? long term needs for technical support for sustainable production are met, enabling them to respond to emerging problems and changing conditions;

- Farmers have the **capacities to manage their productive enterprises effectively** in support of sustainable production, and to identify and satisfy their corresponding input needs, through the strengthening of farmer organisations (Output 2.1.2);

156. Farmers have access to the **financial resources** needed to allow them to cover costs associated with investments in sustainable production (Output 2.1.3).This transition towards more environmentally sustainable management options and/or crops is dependent on the assumption of the technical and economic feasibility of these alternatives, and their social and environmental implications. Project design is based on solid evidence of these factors: the details provided in Annex X show, for example, that conversion from two-crop rice to seasonal rice (floating) and vegetables should result in increased profits for farmers, and constitute a low risk policy under conditions of climate change; while conversion from three-crop rice to seasonal rice plus vegetables, soya bean and maize provides a potential major win-win situation, where farmers benefit from higher productivity, while society benefits from lower flood risk. More detail on the specific management and production practices to be promoted (subject to processes of participatory problem analysis and prioritisation) is presented in paragraphs 169-174 below.

157. The adoption and long-term social sustainability of the proposed ILM approach are also dependent on the assumption that they are in accordance with stakeholder preferences. In 2018, a study[1] using multi-criterion analysis (MCA) and analytic hierarchy process (AHP), to explore the views of double and triple rice farmers and experts on alternatives based on a set of economic, water management and environmental aspects, indicated a clear preference among both farmers and experts for flood-based farming systems with low dikes. Floodwater retention capacity, infrastructure for flood protection, environmental sustainability, and market stability were ranked as the most important factors contributing to livelihood sustainability on the delta.

158. The theory of change further recognises that farmers? productive behaviour is strongly determined by **market signals**. The project will therefore work with value chain actors in order to ensure that these market signals are in favour of environmental sustainability. To this end, it will:

- Promote dialogue and collaboration among value-chain actors (Output 2.2.1) in order to promote **sector-wide shifts towards the promotion of sustainability**;

- **Identify and promote specific value chains** where there is potential for market drivers to incentivise sustainable production (Output 2.2.2);

- **Ensure that value chain-based signals and incentive mechanisms result in the environmental benefits that they promise**, through the application of standards and monitoring mechanisms (Outputs 2.3.1 and 2.3.2).

159. The functioning of this causal pathway is also dependent on continued commitment to environmental sustainability by provincial Governments (which are responsible for extension services) and private sector actors. Prospects for these assumptions being realized are again good, given the buy-in by provincial Governments to the planning and policy instruments mentioned above, as well as their accountability to central Government; and the strong levels of demonstrated commitment to value chain sustainability by private sector actors (evidenced in part by their strong levels of cofinancing support to the project).

160. Vietnam is one of the world?s largest rice exporting countries, and the growing global scale of ?green? export value chains, and of commitments by major value chain actors to sustainability, constitutes a significant impact driver with potential to provide farmers with market incentives for the adoption of sustainable practices. Despite the barriers described in the previous sections, the Government is promoting high quality rice export, and the private sector has also shown preference in recent years to increase exports of high value rice, as well as expanding the domestic market. Though the export prices of Vietnamese rice are still lower than Thai rice, there is potential for increase if barriers to the recognition of quality and brands are removed. The EU-Vietnam Free Trade Agreement (EVFTA) has a scope to increase exports to the EU which allow Vietnam to export a quota of 80,000 tons of duty-free rice each year. This will provide enterprises with greater competitiveness in exporting high-quality rice from Vietnam to EU countries.

161. The existence of a range of sustainability standards for crop production and farm management provides a further impact driver, providing producers and value chain actors with benchmarks of sustainability to work towards as measures of progress, and on which to base market branding. These standards are explored in more detail in paragraphs 175-179 below.

162. The project will not however rely exclusively on using market instruments as leverage for sustainability: around 77% of the rice produced in the Delta is *not* exported and therefore beyond the direct influence of global value chains, and the magnitude of the domestic ?green? market sector, and domestic consumers? willingness to pay for sustainability, is yet to be reliably demonstrated (although the growth of the middle class is likely increasingly to favour such demand in the future).

163. The ToC therefore balances a market-based approach with a recognition that other factors, including productive sustainability and resilience, also function as motivations (impact drivers) for farmers to apply good agricultural practices. It will therefore help to ensure that they are equipped with the technical and financial means to apply such practices, within an overall framework of integrated landscape management and diversified production systems.

164. Other timely opportunities (impact drivers) of which the project will take advantage are summarized in Box 5:

Box 5. Key opportunities of which the project will take advantage:

- Rice production in the last 3 years has shown a shift towards special rice and aromatic rice (above 58%) and the medium and low-quality rice to less than 27% (see Annex I). There is **increasing demand on the domestic market for high quality rice**. Opportunities are arising in the EU and the Middle East markets for high quality rice.

- **Much training on reducing fertilisers and pesticides in rice cultivation** has taken place in the last years and is a very good basis for further investment in other environmental aspects as well as market linkages (see baseline details in Annex V).

- **Companies have recently invested in processing facilities in the MDR, expressed interest in SRP and are willing to take a step wise approach to build trust with farmers**, looking forward to SRP production for high quality rice. SRP can serve as a benchmark for introducing practices and policies leading to higher global environmental benefits in terms of increased biodiversity, reduced GHG emissions and land restauration.

- **There are already quite a number of organic and integrated models that show some positive results** in terms of economic benefit as well as ecosystem sustainability (fish-rice, organic shrimp-rice) (see Annex X and Annex Y).

- Companies have seen the opportunities with **expansion of modern retail chains** in Vietnam and have invested in rice branding. Though sustainable certification is not very familiar in domestic markets, the potential is high.

- Some **brands and retailers have made commitments to sustainable sourcing** (Loc Troi, SunRice) and are looking to expanding the export market. Working with these companies to build inclusive business models for either potential export market or domestic high value rice for modern retail can be explored for long term inclusive business development.

- **SRP Standards for sustainable rice cultivation version 2.0 have been developed** and national interpretation guidelines are on the radar. This is an ongoing effort at the international level. At the national level, a National SRP Chapter is going to be launched. Speeding up the process at both levels will put the first step toward concrete measures for SRP Standard to be applied, and then certification should be explored.

- Though Global GAP and VietGAP are more familiar with consumers, it mainly gives the image of the food safety dimension. **Consumers are increasingly aware of the importance of sustainability** and hence SRP can bring an added value to attract further consumers.

- The Government is keen on supporting the Large Field Model (LFM) and is promoting sustainable rice production.

- **The GEF International Waters (IW) project on Enhancing sustainability of the Transboundary Cambodia - Mekong River Delta Aquifer is currently in its preparation phase and is expected to be endorsed one year after this project.** The IW project, which will focus principally on groundwater management, will complement this project by helping to address transboundary issues that affect water availability and quality in the Mekong Delta; it will contribute water-related data in support of ILM; it will include pilots of water and ecosystem management, the results of which will be of relevance to the problems addressed by this project.

165. ***Causal pathway 3*** (Component 3) involves the **Conservation, management and restoration in forests, wetlands and farming systems to favour ecosystem services.** This is an essential complement to the work of the project in support of sustainable food production practices, and is a key distinguishing feature of the integrated landscape approach of the project, as it will ensure that the food production systems receive the environmental services that they need in order to be sustainable in the long term ? as well as directly generating global environmental benefits in the targeted ecosystems themselves.

166. The shift towards the effective and sustainable conservation and restoration of ecosystems will be achieved through:

- **Direct investment** of project and cofinancing resources (Output 3.1.2)

- Support to **management planning** of key areas for restoration (Output 3.1.1), in order to ensure that investments are relevant, sustainable and cost-effective in delivering environmental services and GEBs;

- Ensuring that management and restoration are supported by **access to financial resources** (Output 3.1.3).

167. The functioning of this causal pathway is again dependent on continued commitment by provincial Government actors, indications of which are positive, as explained above; it is also supported by the recent introduction of regulatory instruments in support of payments for environmental services.

168. The project is one of the first round of child projects selected under the GEF-7 Impact Programme on Food Systems, Land Use and Restoration (FOLUR). Other rice-focused projects were included in Thailand, Malaysia, Indonesia, China and Tanzania in the first round; in India in the second round; and in Guinea in the third round. Specific provisions have been made in project design, especially under **Component 4**, to take advantages of the opportunities offered by the FOLUR IP to maximize impacts at the level of the child project itself, and at programmatic (regional and global) level through synergies. These provisions are detailed in Annex W.

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[1] Dung DucTran, Gerardo van Halsema, Petra J.G.J.Hellegers, Fulco Ludwig and Chris Seijgerde (2018). **Stakeholders? assessment of dike-protected and flood-based alternatives from a sustainable livelihood perspective in An Giang Province, Mekong Delta, Vietnam.** Agricultural Water Management Volume 206, 30 July 2018, Pages 187-199.
https://www.sciencedirect.com/science/article/pii/S0378377418304980

Management and production practices to be promoted

169. The specific management practices to be supported through the project will be defined and validated though case-specific participatory processes (in accordance with the principles of Farmer Field Schools), supported by technical inputs provided through strengthened and well-oriented extension services, and in accordance with spatial land use and development plans based on sound information, integrated analyses and multi-stakeholder dialogues, as well as the overall strategic priorities for production defined for the different zones of the MDR in the Comprehensive Program for Sustainable Agriculture Development in response to climate change in Mekong Delta until 2030 and vision 2045[84] (see paragraph 58).

170. The use of participatory processes for technology development and validation will help to ensure that the practices and systems promoted are feasible and relevant to the needs and conditions of farmers and local communities, taking into account factors such as the competition for labour between rural (agricultural) and urban employment opportunities; the range of alternative income and livelihood support opportunities open to farmers, and farmers? attitudes to risk.

171. The project will build on a baseline situation described in PART II 1a. 1) and Annex V, characterised by a historical emphasis on intensive ?Green Revolution? style rice production with high levels of external inputs and hydrological modification, which (without the intervention of the project) is gradually transitioning towards the production of a greater range of alternative crops (including vegetables and perennials) and less intensive forms of rice production. GEF funds will be used in targeted and incremental ways to help the Government ensure that this transition occurs in ways that deliver the optimum outcomes in terms of environmental, social and productive sustainability.

172. With this in mind, GEF project support will be specifically focused on production and management options that satisfy the criteria listed in Box 7: these will further be narrowed down to a number that can practically be covered with project resources through participatory farmer field schools, as proposed under Outcome 2.1. Further detail on technical aspects of selected management alternatives is provided in Annex Y.

Box 6. Criteria for selection of production and management options to be supported by the project

- Improved environmental outcomes relative to the current situation and the baseline alternative, in terms of implications for environmental values of local, national and global importance (including biodiversity, GHG stocks and ecosystem function) and environmental sustainability;

- Resilience to the effects of external factors that are not directly addressable by the project, including climate change, the impacts of Mekong Dams on hydrology and nutrient levels, and global market conditions;

- Compatibility with principles of livelihood and food security, especially among the poorest and most vulnerable sectors of the population, including the potential to provide resilient livelihood alternatives to those affected by downturns in their current livelihood options;

- Compatibility with, and where possible contribution to, the specific needs of women and (where relevant) indigenous peoples;

- Feasibility, competitiveness and sustainability in agronomic, economic and social terms, taking into account for example considerations of availability of attractive, stable and robust markets, and of factors of production (including labour given the current trends of rural-urban migration and potential disruption to labour supply from crises such as COVID-19).

173. In accordance with these criteria, and subject to the outcomes of the participatory processes described above, the project will prioritize for support the broad categories of production systems and management practices listed in Box 8:

Box 7. Broad categories of production systems and management practices to be supported by the project

- **Overall diversification of household-level farm systems**, guided by principles of agroecology[85], resulting in the provision of the multiple goods and services necessary for rural livelihood systems to be sustainable and for diets to be healthy, and building resilience and capacities for adaptation in response to vagaries and trends in climatic, market and economic conditions;

- **Integrated pest management, especially in rice, fruit and vegetable production systems**, in order to maintain the ecological balance of farming systems and take advantage of natural pest control agents; maintain or increase the diversity of products that farming systems are able to generate (such as edible aquatic fauna in rice fields); avoid risks to the health of farm families; reduce impacts on biodiversity and on ecosystems and production systems downstream due to pesticide contamination; and limit farmers? dependence on input supplies.

- **Flood-based production systems, such as lotus and floating rice**, which are compatible with the restoration of natural flooding cycles aimed at increasing the flood-buffering capacity of flood plans, improving the condition of aquifers, and restoring alluvium inputs (see Annex X).

- **Improved water regulation infrastructure and water management regimes**, including fish passageways designed to permit the movement of migratory fish, and the maintenance of critical flows and levels of water in watercourses, paddy systems and wetland remnants, in order to benefit aquatic species and ecosystems and catch-based fisheries.

- **Management of water levels in rice paddies** in order to reduce net GHG emissions, including but not limited to alternate wetting and drying (AWD) (see Annex Y).

- **Sustainable mechanisation conservation agriculture**, featuring reduced- or no-tillage direct seeding practices (wet or dry direct seeding) or mechanized transplanting in reduced- or no-till fields: these practices have the potential to have positive impacts on soil organic matter (SOM) content (with benefits for soil health as well as reductions in leaching of fertilizers and pesticides), as well as on yield trends. The use of seeders equipped with precision deep fertilizer applicators, and of improved slow release fertilizer results in further reductions in fertilizer use. Sustainable mechanisation conservation agriculture also has reduced labour demands compared to conventional production systems, which is an advantage under the conditions of out-migration of economically active population from rural areas in the Mekong Delta.

- **Reduced-tillage conservation agriculture** also contributes to SOM, and also avoids the need for the extra herbicide applications required by no-till.

- **Rice straw management:** IRRI is working on identifying and promoting options for reducing the environmental impacts associated with rice straw residues, which can include increased CH_4 emissions and air pollution from burning[86]. Options include using residues to contribute to soil fertility (using fungal innocula in order to speed decomposition); rice straw mushroom production; the use of rice straw as cattle feed; mechanized composting; and off-field energy generation (see Annex Y for additional information)..

- **Restoration of ecosystems of critical importance for biodiversity**, ecosystem services and nature-based solutions. Annex AA presents indicative proposals of priorities for ecosystem restoration (e.g. restoration of gallery forest and riparian bffer zones through planted brush structures, hedgerows, live fences, vegetated rip-rap and gabions to counter river-bank erosion; and planting of mangroves to restore their roles in buffering against coastal erosion and providing nursery habitat for aquatic fauna). The specific locations where restoration will be carried out will be confirmed in consultation with local authorities and communities during project implementation, in accordance with the planning frameworks to be supported by the project.

174. The focus of the project on the kinds of approaches described above, and especially the interface between agriculture, fisheries and livelihoods, and the integration between considerations of agricultural sustainability and diverse, resilient and sustainable livelihoods and farming systems, is particularly in line with the technical value-added that FAO is able to contribute as a specialised UN agency.

Sustainability standards

175. The project will promote the use of market-related environmental sustainability standards as leverage for farmers to improve their productive sustainability. These will include, for example, the Sustainable Rice Platform (SRP) Standard (Table 4), GlobalGAP and VietGAP (Box 9), as well as, where appropriate, Participatory Guarantee Systems (PGS). These different standards are applicable in different situations, and for different types of producers and markets. The SRP standard, for example, is specifically focused on rice, but is widely accepted sector-wide, especially among rice sector actors in SE Asia; the others are not crop-specific, so may be attractive to farmers engaged in productive diversification to, for example, vegetables; GlobalGAP is recognised and required by major international markets in, for example, the EU; the more affordable VietGAP may be sufficient for producers aiming at domestic markets for crops such as vegetables; and PGS is based on producer/consumer relations typically at a local level, by-passing conventional value chains dominated by the private sector.

Box 8. Overview of Global Gap and Viet GAP systems

GlobalGAP sets voluntary standards for the certification of production processes of agricultural products around the globe, using the production method that minimizes the negative environmental impacts of farming operations, reducing the use of chemical inputs, and ensuring a responsible approach to worker health and safety as well as animal welfare.

VietGAP (Vietnamese Good Agricultural Practices) is a standard issued by the Ministry of Agricultural and Rural Development. VietGAP consists of different criteria with respect to different agricultural products including vegetables, rice, fruit, etc. This is a food safety inspection program applicable from farm preparation to cultivation, harvesting, and post-harvest storage, taking into account the environment, chemicals, crop protection products, packaging, and working conditions as well as the welfare of the workers on the farm).

176. In the case of rice, the project will focus in particular on the SRP Standard, given that it is a relevant, broadly achievable and widely accepted standard for environmental sustainability: FAO is closely involved with SRP members in the promotion of the SRP Standard throughout the region, through the Sustainable Rice Landscapes Initiative (SRLI), of which this project forms a part. The project will not, however, aim solely at enabling farmers to achieve SRP certification *per se*; rather, helping farmers to reach a situation where they are able to comply with elements of the Standard will be viewed as an entry point that will also allow them to satisfy their own needs for sustainability and resilience and, if they wish, to achieve certification under other standards.

Table 4. Themes and Requirements in the SRP Standard for Sustainable Rice Cultivation

Farm management	Preplanting	Water use	Nutrial management
- Crop calendar - Record keeping - Training	- Heavy metals - Soil salinity - Land conversion and biodiversity - Invasive species - Levelling - Pure seed quality	- Water management - Irrigation system at community level - Inbound water quality - Groundwater extraction - Drainage	- Nutrient management (organic and/or inorganic) - Organic fertiliser choice - Inorganic fertiliser choice
Integrated pest management	**Harvest and posthavest**	**Health and safety**	**Labour rights**

- Weeds - Insects - Diseases - Molluscs - Rodents - Birds -	- Timing of harvets - Harvest equipment - Drying time - Drying techniques - Rice storage - Rice stubble - Rice straw	- Safety instructions - Tools and equipment - Training of pesticide application - Personal protective equipment - Washing and changing - Applicator restrictions - Re-entry time - Pesticides and chemical strorage - Pesticide disposal	- Child labour - Hazardous work - Education - Forced labuor - Discrimination - Freedom of association - Wages

177. The SRP Standard provides a full suite of good agricultural practices and principles for Climate Smart Agriculture, food safety and labour rights. It is the only global voluntary standard for rice at this moment. It is not a pass/fail standard but engages farmers in a continuous improvement process to adopt their practices. Farmers and buyers can make claims regarding sustainable rice cultivation depending om the obtained score, and the level of verification in the assurance process, which is now being rolled out by SRP. In case of interested buyers, the SRP Standard can provide a pull factor for farmers to move to more sustainable rice cultivation. There is a growing interest in Vietnam by various stakeholders and they are in the process of setting up a National SRP Charter.

178. Although the SRP Standard has the potential to support farmers? insertion into green value chains and their relations with private sectors that are committed to sustainability, its also has potential as an instrument for the leverage of multiple direct and collateral benefits that are not necessarily related to market insertion. Scenarios under which such potential benefits may be generated include the following:

? If existing farming training packages exist for IPM, these may be updated and adjusted to include SRP standards, agroecology principles and climate risk management, thereby delivering improved environmental and resilience benefits.

? If farmers are supported (through farmer field schools/extension programmes) to work toward SRP standards, it is likely that the resilience of the their farming business will improve.

? If farmers are able to improve the quality of a portion of their rice output (through better alignment with SRP standards), they may be able to attract better prices and/or purchase guarantees for the rice output.

? If farmers or farmer cooperatives are integrated into value chain networks based on the shared interest of value chain actors in improving quality or meeting a quality standard (such as SRP) it is assumed they will be able to access finance/inputs/services and develop improved capacity and ability to access a range of markets with their rice outputs.

? Monitoring of changes (positive or negative) in the farming systems parameters included in the SRP Standard, and their attribution to management practices or external factors, may help farmers to respond adaptively (and for support to them to be adjusted as needed) and take corrective action.

179. Through farmer-focused processes based on Farmer Field School principles (see Outcome 2.1) the project will help farmers to analyse in a participatory and informed manner how well the pursuance of the sustainability criteria stipulated in the SRP standard corresponds to their needs and conditions, and to take corresponding management measures. The project will also (under Output 2.1.1) seek to include SRP criteria into the curricula of public and private extension agencies.

Strategically targeted geographical approach

180. The cost-effective and scaleable delivery of impacts by the project will be furthered through its strategically targeted geographical approach. Five target provinces (An Giang, Dong Thap, Vinh Long, Soc Trang and Tra Vinh) were selected for direct attention by the project in consultation

with MONRE, during the process of PIF formulation, on the basis of the criteria set out in Box 9. The principal overarching criterion for the selection of the target provinces was their representativeness: this approach maximizes the potential for GEB generation across the whole Mekong Delta region, through scaling out of the GEB-generating models developed there.

Box 9. Rationale for the selection of the target provinces

The target provinces were selected, in order to maximize impact and potential for scaling out, on the basis of the following considerations:

- They form a contiguous block, allowing the application and demonstration of a landscape approach that transcends provincial boundaries and involves inter-provincial coordination, collaboration and harmonization of approaches.

- They extend along the whole length of the Vietnamese portion of the Mekong River system, from the Cambodian border to the coast, thereby providing the opportunity to apply a landscape approach that encompasses landscape-wide flows of environmental services (such as upstream-downstream hydrological flows).

- They cover a wide range of biophysical conditions and production systems, which are repeated elsewhere in the Delta, thereby maximizing the potential for results and experiences to be scaled out. The upstream provinces are dominated by rice triple cropping with no flooding; the middle reaches by triple cropping with uncontrolled flooding; and the lower provinces by rice double cropping including both short and longer duration varieties, as well as salt-tolerant varieties

- They provide the opportunity to generate large scale impact due to the magnitude and diversity of the production systems there: An Giang and Dong Thap provinces have the highest levels of paddy area per farm in the Delta (Annex I); An Giang and Dong Thap are among the largest producers of pangasius; Soc Trang is one of the most important areas for shrimp production; and the provinces of An Giang, Tra Vinh and Soc Trang have shown significant levels of diversification into other crops.

- They face a wide range of threats, which provides the opportunity for the project to maximize its impact and scaling out potential by showing how to address these effectively.

- They provide excellent opportunities for cofinancing and other forms of partnerships, given that they coincide with the areas of operation of, for example, the World Bank ICRSL project and the GIZ GIZ-BRIA II/Market-oriented Smallholder Value Chains Project (MSVC).

181. The specific communities in which the project will operate will be confirmed at project start in consultation with province-level stakeholders, including representatives of provincial Governments. The selection of target communities will be based on the criteria shown in Box 11, which will be applied across the whole of the target landscape (all 5 provinces).

Box 10. Criteria for the selection of the target communities

1) No target province will contain less than 15% of the total number of selected target communities (in terms of their area and population), in order to optimize the distribution of benefits and impact/scaling potential;

2) At least 10% of the selected target communities (in terms of their area and population) will have a majority of Khmer or Cham inhabitants (reflecting that 8% of the population in the region as a whole are of these ethnicities;

3) At least 25% of the target communities will be located in areas currently dominated by intensive triple-cropping of rice, and at least 25% will be in areas with double-cropping and seasonal flooding;

4) At least 30% of the selected target communities (in terms of their area and population) will be actively undergoing processes of productive transition from rice production to alternatives;

5) At least 50% of the selected target communities (in terms of their area and population) will be made up of the lowest 50% of communities in the region in terms of poverty levels.

6) At least two target communities will be located between the Mekong mainstream and Tram Chim National Park, or between Tram Chim NP and Lang Sen Wetland Reserve.

182. The suitability of the target districts and communities will be continuously reviewed following project submission and during implementation, with the possibility of switching to

alternatives. This would be subject to consultation with the local project advisory committee, and would only be undertaken if absolutely necessary given its potential effects on project progress. The risk of the need for this arising, for example due to possible changes in levels of buy-in by local stakeholders, will also be mitigated by ensuring adequate and continuous consultation with these actors, the promotion of their active participation, and the responsiveness of project management to their concerns.

183. The specific locations of conservation and restoration initiatives under Component 3 will also be confirmed on the basis of more detailed analyses, during implementation, of their global environmental values (for example the presence of globally rare, endemic, migratory and/or threatened species and fragile or unique ecosystems), or their importance in the provision of ecosystem services, supported by information flow facilitated under Outcome 1.3.

184. The approaches and strategies summarized above, and set out in more detail in the description of components, outcomes and outputs below, coincide closely with the provisions of the Mekong Delta Regional Plan, which is currently under preparation.

Components, Outcomes and Outputs

***Component 1:* Enabling environment for integrated landscape management (ILM)**

Responsible institution: MONRE

Outcome 1.1 Strengthened planning, governance and regulatory frameworks for integrated landscape management

Outcome Indicator Target: 60% of people (women and men) in different stakeholder categories (Government, farmer organisations, community representatives) consider that landscape management issues prioritised by them are being satisfactorily addressed in planning, governance and regulatory frameworks, as measured by Knowledge, Attitudes and Practice (KAP) surveys on a sample of the population.

Output 1.1.1 Multi-stakeholder socially inclusive platform established for dialogue on governance and planning responses to landscape-wide issues in relation to the implementation of Resolution 120

Output indicator target: *One multi-stakeholder socially-inclusive platform functioning, and meeting at least annually, with participants including representatives of Provincial Governments (DONRE and DARD), private sector (e.g. trades associations), farmers? organizations, women?s organizations and indigenous peoples*

185. GEF resources will be used to support the establishment and functioning of an inter-provincial platform for multi-stakeholder dialogue on the landscape-wide issues and inter-stakeholder relations that need to be addressed if Resolution 120 is to be successfully implemented in accordance with principles of integrated landscape management (see Box 4). This platforms will be of crucial importance to the negotiated definition of planning, decision-making and management instruments with multi-stakeholder and/or inter-provincial scope (see Output 1.2.2). It will as necessary be complemented by *ad hoc* platforms/meetings to address specific issues such as landscape-level implications of modifications to agricultural production systems, landscape-wide biological connectivity, and the landscape-level multi-province, public/private ?organic coast? initiative supported by SNV; and of incentive/PES schemes (see Output 3.1.1) aimed at addressing landscape-wide and/or inter-stakeholder needs and functioning ecosystem flows and impacts, such as those shown in Box 12.

Box 11. Examples of inter-stakeholder flows of impacts potentially to be addressed through dialogue mechanisms

- The impacts of shrimp farming on coastal ecosystems and aquifers, affecting the interests of coastal communities through sea level rise and wave impacts; of fishing communities, given the reliance of fish populations on mangroves as spawning, grow-on and refuge areas;, and of farming communities, due to the subsidence and salinity build-up associated with aquifer depletion by shrimp farmers;
- The impacts of intensive rice farming on the interests of aquaculture producers and freshwater fisheries communities due to pesticide and fertilizer contamination of water resources, and modification of river flows (affecting salinity levels and fish populations) by dyke construction and poldering; and on downstream communities, affected by flooding associated with the reduction of flood absorption capacity by upstream poldering.

186. As a result of the project, these platforms will be established with rules of operation co-defined among the participating stakeholders (such as the identity of the host institution and chair, scope, and frequency/reasons for meeting); and capacities will be developed, particularly in provincial Governments and academic institutions, for facilitating and overseeing these platforms so that they are sustained in the long term, beyond the life of the project itself. These platforms will have important roles to play in the long term in order to support the continued, sustainable and consensus-based application of ILM, ensuring that the interests of diverse stakeholder groups continue to be balanced, that any emerging conflicts can be resolved, and that efforts and resources are appropriately allocated.

187. Support to the platforms will also include the establishment of mechanisms, under Component 4, to ensure that the discussion, negotiation, planning and decision-making processes that are undertaken through them are underpinned by reliable and accessible information, for example on environmental, social, demographic, economic and other conditions in the delta. The Mekong Delta Center will play a central role as a source of such information, which will in addition be complemented by the results of the natural capital accounting and targeted scenario analysis studies under Output 4.1.1.

Output 1.1.2 Provincial Master Plans formulated and applied based on Strategic Environmental Assessments (SEA) that take into account sustainability considerations, GEBs, landscape dynamics and results of multi-stakeholder dialogue

Output indicator target: *5 provincial Governments have applied SEA in the formulation and application of their Provincial Master Plans, taking into account sustainability considerations, GEBs, landscape dynamics and results of multi-stakeholder dialogue*

188. It is anticipated that, by the time of project start, the Mekong Delta Master Plan (MDMP) will have been approved, but provinces will not yet have developed their Provincial Master Plans (PMPs): these will replace the earlier arrangement whereby provinces developed separate land use plans and sector development plans, and will constitute the principal instruments that will determine how the target landscapes are managed. The project will help to ensure that environmental sustainability (ILM and GEB) issues are mainstreamed into these PMPs, so that, for example, they recognise and respond to biological processes (on which productive sustainability in agricultural systems depends), flows of ecosystem services and impacts across the landscape, opportunities for nature-based solutions, and the interests of different stakeholders. This will help land use planners not only to balance appropriately alternative strategies for agricultural production and natural resource use, but also to take into account in land use planning the implications of the conversion of rural/agricultural land to urban use, in different situations.

189. To this end, project resources will be used to provide technical support to the realisation of Strategic Environmental Assessment (SEA) to guide the province-level interpretation of the MDMP and the formulation of the PMPs, in accordance with the existing regulatory provisions in relation to SEA[87]. Project incremental support will serve to ensure that these SEA processes focus in particular on the issues set out above that underpin the ILM approach, that operate at landscape level and that potentially have cumulative implications with long time horizons (e.g. landscape-wide ecosystem flows, inter-stakeholder trade-offs, and interrelations among considerations of environmental sustainability, macroeconomic goals and social development policies). The multi-stakeholder platforms to be strengthened under Output 1.2.1 will play vital roles as channels for the

expression of the interests of different landscape stakeholders in these processes of SEA and PMP formulation.

190. The project will also ensure that these assessment and planning processes are supported by reliable, timely and relevant data, as proposed under Outcome 1.3.

Outcome 1.2 Policy and regulatory commitments to sustainable management of the Mekong Delta are consolidated, coordinated and institutionalized

Outcome Indicator Target: 5 provincial Governments with specific commitments for continuing inter-provincial coordination in administrative procedures, regulations and/or organizational structures

Output 1.2.1 Evidence-based guidance for policy-makers in Central Government to raise awareness regarding the national/sector benefits of integrated approaches for production and landscape management

Output indicator target: *60% of actors in Central Government (MoNRE and MARD) aware of the benefits of integrated approaches*

191. The Government has already expressed its policy commitment to the sustainable integrated management of the Mekong Delta through Resolution 120: the long-term sustainability and scale of the transformative impacts of the project, and delivery of the provisions of the Mekong Delta Master Plan, will, however, depend on policy makers in central Government having access to objective, balanced and reliable information on the environmental and socio-economic implications of alternative scenarios for the management of the Delta, in order to guide new investment and decision-making: under Component 4, project resources will be used to support the generation and dissemination of this information; Component 1 will focus on supporting key actors in taking this information on board, interpreting it, and applying it in decision-making and policy formulation, facilitated as appropriate through multi-stakeholder workshops and through active on-the-job collaboration with the institutions in question.

Output 1.2.2 Environmental sustainability criteria included in systems for provincial government accountability to central Government

Output indicator target: *5 provincial Governments include sustainability criteria with ILM perspectives in their reporting to central Government*

192. In order to ensure that the commitments of provincial Governments to integrated landscape management (ILM) and inter-province coordination are maintained in the long term, GEF resources will be used to incorporate ILM measures into government processes, whereby provincial Governments periodically report sustainability criterion progress to central Government, and provide oversight of the effectiveness of their application. Project resources will be used to support the precise definition of these criteria and to develop capacities in provincial Governments for the collection and management of the information required to determine landscape status, levels of achievement and compliance.

Outcome 1.3: Management and decision-making in Mekong Delta landscapes is optimised by effective information management

Outcome Indicator Target: 5 provincial Governments are managing and applying information on parameters related to environmental sustainability in planning and decision-making processes

193. The relevance, effectiveness and equitability of decision-making, planning and dialogue processes in support of the sustainable management of the Mekong Delta, in accordance with Resolution 120 and the Mekong Delta Master Plan, will be dependent on these processes being supplied with reliable and balanced information on conditions in the region and their projected evolution over time (as a result of factors such as climate change, demographic change and economic trends); the range of options available for management, and their feasibility; and the projected implications of alternative management scenarios, under a range of different assumptions.

Output 1.3.1 Objective information resources regarding the implications of alternative management scenarios and national/sector benefits of integrated approaches

Output indicator target: *2 natural capital accounting (NCA) and 2 targeted scenario analyses (TSA) carried out*

194. Information on the implications of alternative management scenarios will be aimed principally at planners (through the SEA processes in support of PMPs, under Output 1.1.2), policy-makers (see Output 1.2.2) and dialogue platforms (Output 1.1.1). Rather than prejudging decision-making outcomes, the aim will be to provide these audiences with the means by which to base decisions transparently (through the processes set out above) on as full an understanding as possible of the nature and magnitude of the implications of these alternatives, under different assumptions, and of how these are likely to differentially to affect the interests of different stakeholder groups.

195. To this end, project resources will be used, in collaboration with national academic and research institutions, for carrying out natural resource accounting studies, to generate information on the economic values of the natural resources and ecosystems of the Delta and the services they provide; targeted scenario analyses to examine the economic implications of alternative course of action, under a range of different assumptions (e.g. discount rates, risk scenarios, and weightings); and the provision of training to members of central and provincial Governments on the interpretation and the application of the results within the framework of the Mekong Delta Master Plan.

Output 1.3.2 Programme for training and awareness raising of provincial government actors on ILM and its application in planning and decision-making

Output indicator target: *80% of provincial Government staff (DONRE and DARD) trained on ILM and its application in planning and decision-making*

196. Integrated landscape management (ILM) is a new concept to most actors in provincial Governments. Under this output, the project will invest in providing training and awareness raising to provincial Government staff to enable them to understand, apply and communicate the concept. This will be carried out in a participatory, hands-on way, for example by organizing workshops focusing on specific environmental issues recognised by the provincial Government actors themselves, in which the participants will be helped to identify and spatially map out the flows of environmental services and pressures that are involved, so that they realise the importance of thinking beyond individual farms or administrative units. This will also extend to mapping out stakeholder and the interactions among them, that determine environmental processes and sustainability.

197. Investment will also be made in enhancing the capacities of provincial Government actors to communicate ILM concepts in an understandable way to other stakeholders: this will be of particular importance in allowing provincial Governments to play an effective role during and after the project in facilitating processes of multi-stakeholder dialogue and planning in relation to landscape management.

Outcome 1.4: Monitoring systems and metrics support adaptive landscape management, and compliance with regulatory requirements and market-based standards

Outcome Indicator Targets:
- 5 provincial Governments monitoring and applying sustainability standards and indicators (e.g. NBS, TAPE) to guide adaptive management at landscape level

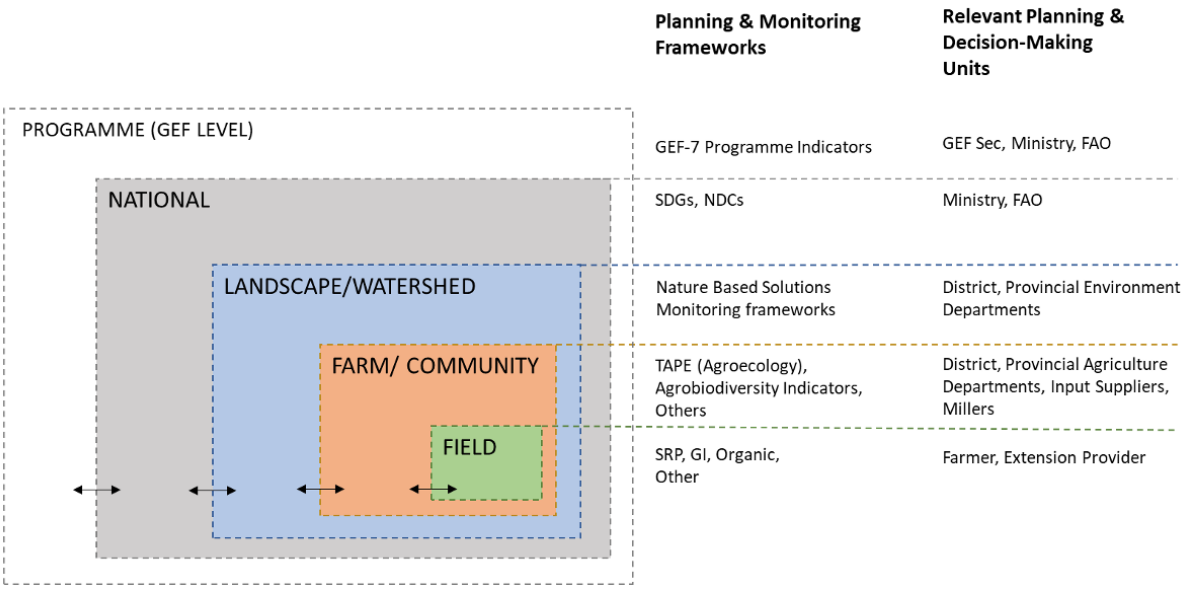
Output 1.4.1 Multi-level framework for adaptive management established, based on enhanced and locally-relevant indicators and standards of sustainability

Output indicator target: *Multi-level framework established, linking landscape, community/farm and field levels and covering NBS, agroecology and productive sustainability considerations*

198. The project will provide advisory and facilitation support to the collaborative development of a multi-level framework to track and guide progress on managing the target landscapes in an integrated manner, in such a way as to ensure that field-level management is compatible with and supported by appropriate management at farm, community and landscape levels, and vice versa. This will necessarily be a collaborative effort involving environment and agricultural sector entities at national, provincial and local levels, as well as private sector entities and farmer organizations. The proposed elements of such a framework (subject to validation) are shown in Figure 16.

199. The main elements of the framework will include the collaborative definition of appropriate and complementary indicators of sustainability at each level, that are capable of being rolled into each other from farm through to landscape level and beyond, together with protocols for their monitoring; and the co-design of practical mechanisms whereby the results of the monitoring will be used to orient planning and decision-making, at each of these levels, in an adaptive, vertically-integrated and complementary manner. The collaborative definition of indicators will be carried out through a combination of participatory assessments of needs, interests and capacities with each stakeholder group, and the identification and discussion with them of alternative indicator options; followed by facilitated multi-stakeholder discussion of the options, aimed at achieving consensus-based agreements.

Figure 16. Multi-level framework for adaptive management



200. Subject to participatory analysis and planning during project implementation, the indicators to be promoted by the project to guide ILM in the long term may address issues including those listed in Box 13.

Box 12. Examples of variables to be reflected in ILM indicators

- Degree of progress with the establishment and application of mechanisms for ILM, including multi-stakeholder inter-provincial dialogue mechanisms, and the incorporation of ILM considerations into provincial land use plans and M&E systems. This pragmatic indicator has potential to be applied in the processes whereby provincial Governments report their progress on application of ILM policies to central Government ? see Output 1.1.2);

- Progress in addressing the specific landscape-level flows of impacts and ecosystem services (see Figure 14) that provide the rationale for the application of the ILM approach, as measured for example by changes in behaviour or conditions at their source; reductions in impacts or improved services in affected areas or populations; evidence of collaborative management and reduced inter-stakeholder conflict; and/or the existence of mechanisms for the negotiation, regulation or incentives mechanisms to address impact flows and conflicts.

- Data on the overall numbers and the spatial distribution of farms complying with sustainability standards (measured at farm level) will serve as indicators of overall changes in environmental behaviour at community and landscape levels. These parameters have the potential to be used as indicators by extension agencies (of DARDs, NGOs and private sector entities) of the overall effectiveness of their technical support investments; by provincial Governments and MONRE as indicators of compliance with targets and spatial priorities for management improvements set out in land use plans; and by value chain actors as an indicator of progress with ?greening? their value chains in compliance with their corporate commitments.

- In addition to farm-focused indicators, the project will support the formulation and application of indicators of the effectiveness of the application of ILM in addressing landscape-level threats, stabilizing landscape dynamics (or ensuring that landscapes transition to alternative conditions of sustainability) and maintaining and promoting landscape-level biological processes and ecosystem flows. The main uses of indicators at landscape level(s) will be to inform the adaptive application of the Mekong Delta Master Plan (as a supra-provincial framework for landscape management); the periodic updating of provincial land use plans, including their consideration of supra-provincial considerations

201. Standards have the potential to provide benchmarks for the objective verification of progress in relation to indicator targets, as well supporting on-farm adaptive management and demonstration of compliance with market requirements. Subject to co-identification with stakeholders, the project may support the application, and in some cases local fine-tuning, of the standards listed in (the promotion in practice of field/farm level indicators including the SRP and Organic Standards will be addressed under Output 2.2.3 below):

Box 13. Examples of standards to be supported through the project (subject to further confirmation with stakeholders during project implementation)

- The **SRP Standard** (see paragraph 164): this sets out pragmatic and relatively easily achievable requirements, at field level, focusing on a range of issues related to productivity and efficiency, environmental impacts and resilience, with significant potential for spillover benefits across different objectives. The SRP standard can function both as a means of facilitating access to markets favouring sustainability, and as a tool for internal use by farmers to orient the selection of good management practicess and monitor their application and effectiveness. Application of the SRP standard is therefore directly related to management practices, whether or not it is also used to support value chain insertion.

- **Organic standards** are also applicable at field level, and function primarily as a means of facilitating access to specialized organic markets by demonstrating compliance with their requirements. They are therefore also directly related to management practices, but only (or principally) within the context of market insertion: they have some potential for spillover benefits in terms of reductions in chemical pollution, maintenance of agrobiodiversity and reductions in greenhouse gas emissions but on their own do not guarantee sustainability at farm or landscape levels, as they may lead to reductions in productivity.

- The **Tool for Agroecology Performance Evaluation (TAPE)**[88] aims to produce global and harmonized evidence (information and data) on the multidimensional performance of agroecological systems in order to inform policy making and to support the process of transition to agroecology. The tool can be used by governments but also farmers, scientists and extension workers. More specifically, TAPE aims to: build knowledge and empower producers through the collective process of producing data and evidence on their own practices; support agroecological transitions at different scales and in different locations by proposing a diagnostic of performances over time and by identifying areas of strengths/weaknesses and enabling/disabling environment; inform policy makers and development institutions by creating references on the multi- dimensional performance of agroecology and its potential to contribute to the SDGs.

- The **Agrobiodiversity Index**: this brings together, in innovative combinations, data about the agrobiodiversity that people sell and eat, the agrobiodiversity in their fields and lands, and the genetic resources that underpin them, to give novel insights into food system functioning. The Index can help countries, companies and projects to identify policy and business levers, risks and opportunities, and to guide public and private sector investments for future adaptability and resilience.

202. Examples of the multiple dimensions and criteria covered by TAPE are shown in Table 5.

Table 6. Non-exhaustive list of advanced criteria used in TAPE

Main dimension	Advanced criteria	Possible methodologies for assessment	SDG
Economy	**Resilience**	Self- evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP)	1 2 8
Health and Nutrition	**Food security and nutrition**	- Food self-sufficiency ration: production x 100/(Produciton + purchases- sales) - Nutritional value of agricultural produciton	2 3
Society and Culture	**Decent work**	Decent Work Indicators or Agriculture and Rural Areas (FAO, 2015)	8
Environment	**Water**	- Water use efficiency (e.g. LEAP guidelines for livestock) - Water pollution (e.g. LEAP guidelines on nutrient use)	3 6

Main dimension	Advanced criteria	Possible methodologies for assessment	SDG
	Climate change mitigation	- GHG emission (e.g. Ex-Act, GLEAM-I, Cool Farm tool) - Carbon sequestration (under development for GLEAM) - GTAE Memento pour l??valuation de l?agroe?cologie (Levard et al., 2019)	13

203. The development and application of sustainability measures at landscape-level (incorporating the ILM-focused process and impact indicators proposed above and taking into consideration landscape-level dynamics of threats and ecosystem services in a way that is not possible at the level of individual farms) would enable private-sector actors to focus their sourcing more effectively, prioritizing sustainably-managed landscapes rather than just farms; this would also have the potential to act as an incentive to provincial Governments to make concerted efforts through policy, regulatory and investment measures to bring the management of their areas of jurisdiction up to sustainable levels, in order to make their jurisdictions more attractive to private sector actors as sources of supply. A landscape-level variant of the SRP Standard could also provide benchmarks for the reporting of progress on sustainability by provincial Governments to central Government (see above, and Output 1.1.2).

Output 1.4.2: Monitoring frameworks for agricultural GHG mitigation including indicators and MRV tools

Output indicator target: *1 GHG monitoring system established*

204. Through modifications to rice field management systems (for example, the use of periodic draining and rewetting practices such as alternate wetting and drying, or AWD, systems), the project has major potential to generate climate change mitigation benefits in the form of reduced greenhouse gas (GHG) emissions, especially of methane (CH_4). Reducing emissions from rice production has been highlighted as a priority policy measure in Vietnam?s Nationally Determined Contributions (NDCs) under the Paris Agreement. Improved monitoring and measurement of emissions under the project will help to demonstrate the potential to incorporate a formal contribution from agriculture to the NDCs in the future and also open up opportunities to attract finance for verifiable emissions reduction activities.

205. In order for Vietnam to demonstrate the magnitude of these contributions to its NDCs, and for carbon payment schemes to function, the project will support the application and improvement of systems for monitoring, reporting and verification (MRV) including those that draw upon estimating emissions using remote sensing technology. Application of these systems will in addition support the adaptive management of the project, particularly in relation to the selection of rice management systems to be promoted and supported: particular attention will be paid to monitoring the net implications of alternative management systems in terms of their emissions of different GHGs (CO_2, CH_4 and N_2O)[89]. Data from the MRV systems will be integrated in the digital M&E platform for detailed insights and to monitor the GHG mitigation against different project indicators and different frameworks.

<u>Component 2.</u> Promotion of sustainable food production practices & responsible commodity value chains that contribute to ILM and GEBs

Responsible institution: IPSARD

206. The project will help to ensure that the implementation of Resolution 120 and the Master Plan is supported by innovative, sustainable and adaptive technical options for crop production and farm management, that reflect variations in needs and conditions across the target landscape. In line with the ?nature-based solutions? approach (see Annex AA), actions under this component in support of sustainable production and management options will be closely coordinated and integrated with those under Component 1, in order to ensure that farm management optimizes environmental outcomes by responding to spatial variations in conditions across the landscape, and landscape-wide dynamics of ecosystem services and threats; and with those under Component 3, in order to ensure that production areas and remnant ecosystems complement each other, in order to reduce

impacts from production on ecosystems and at the same time maximize ecosystem service provision to production systems.

207. As explained above, the project will build on a baseline situation that is gradually transitioning away from unsustainable intensive rice production towards the production of a greater range of alternative crops (including vegetables and perennials) and less intensive forms of rice production: it will specifically focus on helping to ensure that this transition occurs in ways that deliver the optimum outcomes in terms of environmental, social and productive sustainability, through the enhancement of capacities among local stakeholders to identify and apply appropriate productive options, and by ensuring that they have access to the markets and inputs that will enable them to do so.

208. Outputs under Outcome 2.1 will be focused on addressing ?supply-side? issues, ensuring that farmers have access to the technical and financial support they require in order to be able to produce sustainably. Outputs under Outcome 2.2, meanwhile, will focus on improving the attractiveness of sustainable rice production to farmers by supporting their participation in ?green value chains? that reward sustainable production.

209. The specific management and production practices to be promoted will be defined case-by-case, through participatory processes of situation analysis and planning, involving farmer support institutions and farmer organizations. A reference point for the consideration of these technical options, to be adapted as necessary to local needs and conditions, will be the SRP Standard (see paragraph 164).

Outcome 2.1: Producers (women and men) have reliable access to technical and financial support and productive resources to adopt agricultural practices and natural resource management that contributes to ILM and secures GEBs

Outcome Indicator Target: 15,000 farmers (of whom 10% are ethnic minorities and 30% are women) are able to access the technical and financial support they need to adopt agricultural practices and natural resource management that contributes to ILM and GEBs

210. In support of this outcome, the project will invest in developing the capacities of farmers to apply management and production practices that contribute to ILM and GEBs: in order to maximize sustainability and scale of impacts, it will also (under Output 2.1.1) strengthen durable institutional capacities for ensuring the continued and adaptive provision of support to farmers in the long term.

211. In those cases where the SRP Standard (or variants of it) is being pursued, capacity development will focus on the conceptual understanding of the Standard, and its potential to generate economic and environmental benefits. Capacity development will also address how to apply the Standard, how to establish the SRP scores and how to engage in action/reflection cycles for continuous improvement by selecting those requirements on which farmers want to work. Specific technical training will target the practices within those requirements which need improvement. Within farmer cooperatives or organizations, a quality management system will be put in place to steer the action/reflection cycles for continuous improvement in the adoption of the good agricultural practices (GAPs) in the Standard.

212. In cases where the SRP Standard is used to support farmers? relations with private companies, and their participation in green value chains, capacity development will also focus, as necessary, on the development and implementation of assurance systems based on verification, for example in the form of Internal Control Systems, second level verification systems such as Participatory Guarantee Systems (PGS), or external third party verification systems.

Output 2.1.1 Strengthened mechanisms for extension supporting GEBs and ILM

Output indicator target: *5 DARD extension services, 3 private sector extension services and 10 cooperative-based/cooperation groups covering 30,000 farmers promoting management practices that specifically favour GEBs and ILM*

213. GEF resources will be used in a focused, cost-effective and incremental way in order to ensure the maximum possible impact in terms of the development of farmers? knowledge of, and abilities to apply, sustainable production/management options that contribute to integrated landscape management (ILM), and the delivery of global environmental benefits (GEBs). The project will promote the use of nationally and internationally recognized benchmarks of such sustainability,

including the SRP Standard, TAPE, the Organic Standard and the Agrobiodiversity Index (see Box 15), selected as appropriate in accordance with crop types, field conditions, farmer capacities and market requirements.

214. This will be achieved through a model of close partnerships, under which the transfer of technologies to farmers and their cooperatives will principally be carried out by the extension programmes of Government (provincial DARDs), international cooperation agencies, NGOs and the private sector, while GEF resources are focused on promoting the incorporation into these programmes of considerations of ILM and GEBs. The magnitude of the resources and coverage of these partners place them in an ideal position to function as vehicles for scaling out the ILM-compatible practices and GEB delivery that is sought under the GEF project; this model will also benefit them given that the incorporation into their operations of approaches based on ILM and ?working with nature? (through nature-based solutions, NBS), will contribute to the overall sustainability of their impacts.

215. Specific examples of institutions and projects/programmes with which the GEF project will partner in order to achieve leverage of the large-scale delivery of technical support include:

- The extension systems of provincial-level Departments for Agriculture and Rural Development (DARD)
- Private sector producer support (for example that provided by rice trading companies such as SunRice to their supplying farmers)
- The World Bank ICRSL project, which is principally focused on climate change resilience and is complemented by GEF project 9265 which aims to deliver benefits in the CC, LD and SFM focal areas.
- GIZ Green Innovation Centres
- GIZ Mekong Delta Climate Resilience Programme
- The World Bank GCF Flood-Based Agriculture Programme.

216. GEF resources will therefore be used to support the roles of these public and private extension services as vehicles for the delivery of ILM-compatible practices to farmers through:

- The proposal of production and management options for promotion through the extension programmes, that have potential for contributing to ILM and delivering GEBs in different locations and under different conditions, and for which markets/value chains exist or can be developed (under Output 2.2.2 below);

- Support to the spatial targeting and tailoring of farmer support programmes, in order to maximize the relevance of the practices promoted in relation to spatial variations in conditions across the landscape, and the spatial configurations and characteristics of landscape-wide flows of ecosystem functions, services and impacts;

- The use of enhanced communication strategies (as applied by the VNSat programme) such as reporting on TV, local speakerphones, field workshops and posters, a well as social media and mobile phone technology;

- Support to the formulation of extension modules and materials that incorporate considerations of GEBs and ILM;

- Strengthening of awareness and knowledge among public and private sector extension agents regarding approaches and management options that are compatible with ILM and deliver GEBs, backed up by improvements to the syllabi of the national institutions where future extension agents are trained;

- Support to the application by the partners of the farmer field school (FFS) model, involving farmer-based context analysis and experimentation in order to maximize the ownership and relevance of the practices identified.

- In relation to the SRP Standard, the project will contribute to the establishment of a pool of SRP Key Trainers, who have been trained by SRP Authorised Trainers. It will also work with: extension workers from government agencies; private sector companies engaging with SRP Standard (such as SunRice, VinaSeed, Afiex, Satra, and others to be identified after in-depth discussion); staff from supporting NGOs with experiences on the SRP Standard (such as Rikolto); farmer trainers, to enable reaching scale within bigger organisations.

217. In addition to ?training trainers? through the provision of support to extension systems, the project will directly support the development of farmers? knowledge and capacities for sustainable production. This will be achieved through a range of institutional arrangements, including the contracting of service providers using GEF funds, partnerships with other initiatives (such as the GIZ BRIA project), and the orientation of DARD extension agents at local level. Active involvement of DARD extension agents in this process has the potential to contribute significantly to the durability of institutional uptake of extension messages.

218. A range of approaches to capacity development and knowledge transfer will be used, but particular emphasis will be placed on participatory action learning and farmer-based experimentation, using the Farmer Field School model. Given the strong organizational frameworks already present among producers in the target area, the project will work with existing farmer cooperatives and other farmer organizations as platforms for this learning and experimentation.

219. This will be complemented by the establishment of pilots/demonstrations of alternative management models (for example, integrated fish/rice and duck/rice systems, and ? in areas affected by saline intrusion ? rice/shrimp systems): some demonstrations of such models have already been established in a number of locations in the Mekong Delta, and the project will build on these to address aspects of sustainability, economic feasibility, livelihood compatibility and resilience in a more integrated way (including the approaches of agroecology and nature-based solutions ? examples of NBS to be promoted are presented in Annex AA).

220. Particular attention will be paid to ensuring that women have adequate access to extension support, and that the training provided covers issues with specific potential to generate benefits for women, while at the same time delivering environmental sustainability benefits. Example of good practice in this regard are shown in Box 15.

221. These investments in knowledge development and transfer will be accompanied by strategic plans to ensure the continuity, communication and scaling out of support and impacts in the selected locations. These plans will be jointly developed with provincial and district Governments and the public and private extension agencies in question, within the overall framework of the project?s knowledge management strategy, which will be developed under Outcome 4.2.

Box 14. Good practice examples for training on rice production[90]

?Ecological engineering?
Women from Tien Giang Province participated in a training to learn how to keep their rice fields ecologically sound and balanced by planting flowers around them. The ?friendly? insects and other organisms that live in this diverse vegetation around the rice fields help control rice pests such as the brown planthopper. Women were trained to observe the increase in bees and parasitoids (called small bees) that visit the nectar-producing flowers grown on bunds and to preserve them. If the women continue implementing what they learned, in the long term, households will save as much as $50-100 per season by reducing insecticide inputs without suffering any production loss. Source: (IRRI Rice Today 2013).

Participatory varietal selection (PVS) of new rice varieties for submergence prone and salt-affected areas
Through PVS, men and women can express their criteria in selecting rice varieties as well as test the new seeds/varieties on their own fields. For example, in most Asian rice farming systems, weeds are pests that cause low yields. Women from poor farming households provide unpaid labour and suffer the drudgery of hand weeding to obtain higher yields. Experience in eastern India revealed that when participants of PVS were given training on removing weed seeds and off-types to maintain the quality of seeds to be planted for the next season, the knowledge they gained gave them more decision-making authority on weed and seed management.

Output 2.1.2. Farmer-based organizations with capacities to obtain and manage productive inputs needed to produce sustainably

Output indicator targets: *10 farmer-based organizations with strengthened capacities to obtain and manage productive inputs*

222. In addition to training, farmers require supporting services to enable them to put into practice what has been learned, including for example services related to information, inputs, equipment and mechanisation (see Box 16). The project will support the development of capacities to ensure this, for example through:

- The development and/or strengthening of specialised small or medium-sized enterprises (SMEs), farmer organizations or cooperatives, to deliver these inputs accompanied as needed by training, business plan development and credit facilities (particular attention will be paid to supporting youth and female participation in these enterprises)

- The strengthening of the administrative and organizational capacities of farmer organisation, for example robust membership management systems, recordkeeping and data collection. This may be supported, for example, through information and communications technology (ICT) and mobile apps (specialised SMEs may develop specific apps or support farmer organizations in the use of existing apps).

Box 15. Examples of requirements for the application of the SRP Standard

- ***Information:*** documented proof of heavy metal content in soils or information on the historical use of heavy metal containing pesticides in the country in the past (SRP r04); documented proof of salinity in soil and/or water (SRP r05); meteorological data and forecasts (SRP r10); analysis of inbound water quality (SRP r12); groundwater extraction rights (SRP r13); specific recommended fertilisation rates for the area (SRP r15); list of approved pesticides in the country for use in rice (SRP r18); economic thresholds for key pests (SRP r18)

- ***Inputs:*** Quality seed of appropriate varieties (SRP r09); organic fertilisers (SRP r16); slow release N-fertiliser (SRP r15)

- ***Equipment:*** e.g. moisture meters; water flow meters, fertilisation color cards, soil spectrometers

- ***Mechanisation:*** for e.g. laser leveling, dry seed drilling (or transplanting), mechanical weeding, harvesting and straw collection, and split fertilisation

Output 2.1.3. Financing services available to farmers as a result of project facilitation

Output indicator target: *3 cooperatives or agribusinesses with improved access to financing (e.g. WBCSD, Agri-3 Fund, DFCD) for sustainable production*

223. The project will leverage private sector support to help meet farmers? needs for financing support for the implementation of sustainable management practices. Key areas of the value chain where such support is likely to be needed (as suggested by the value chain SWOT analysis summarized in paragraph 0) include processing/value adding, branding and packaging, as well as upfront investment in new machinery and inputs, the costs of certification and audits, and systems for traceability and internal control.

224. This will be achieved through contacts and partnerships, to be facilitated by the project, with regional and global financing entities. The FOLUR Global Platform will potentially also have a major role to play in this regard in facilitating these contacts: of particular importance will be facilitation and coordination by the GP at regional (Asia) level, given the regionally-specific issues, actors and opportunities related to the rice sector.

225. In partnership with other SRLI partners, the World Business Council for Sustainable Development (WBCSD) is leading the development of blended finance products based on the SRP standards: an action group has been established with SRLI and other partners to engage with finance providers and investigate links with the technical assistance program being developed under the project. These blended finance initiatives aim to leverage debt, equity and carbon markets to open up new opportunities for farmer beneficiaries and communities to access financial resources needed in support of investments in sustainable production and management.

226. Additional opportunities to link the project to blended finance will be developed through leverage of engagement with multi-lateral finance institutions such as the International Finance Corporation (IFC), which will be a core partner of the World Bank-led Global Platform.

227. Furthermore, the project will develop opportunities for partnership and leverage with UN Environment and the Dutch multinational banking and financial services company Rabobank,

under the recently-launched global Forest Protection and Sustainable Agriculture partnership. This partnership aims to unlock at least USD 1 billion in finance towards deforestation-free, sustainable agriculture and land use. The AGRI-3 Fund will catalyse private financial resources for this initiative: it aspires to function as a role model for banks, other financial institutions and agribusinesses by developing business models that include acceleration of forest protection and reforestation and implementation of innovative agricultural solutions, whilst improving the living standards of local farmers and smallholders.

228. The FOLUR Global Platform will be kept fully informed on, and where necessary involved in, discussions with potential partners in relation to financing services, such as WBCSD and Rabobank, in order to ensure an efficient IP-wide consistency of approach and to maximize opportunities for exchanges and scaling out of ideas and approaches.

Outcome 2.2 Value chains provide incentives and standards for managing rice landscapes and production systems in accordance with environmental sustainability and GEBs

Outcome Indicator Target:
- 1,500 farmers (of whom at least 10% are ethnic minorities and 30% are women) are applying practices that contribute to ILM and GEBs as a result of their insertion into value chains that favour these
- Companies accounting for 20% of the rice traded in the MDR have committed to applying sustainabilty standards across their operations

Output 2.2.1 Networks of public/private value chain actors supporting value chain leverage of environmental sustainability

Output indicator target: *3 public/private action plans developed*

229. The use of value chains as leverage for the effective and lasting transformation of the rice sector in the Mekong Delta towards sustainability requires collaboration between the Government (given its normative roles and its responsibility for optimizing societal outcomes), the private sector (given its central role in relation to value chains and consequently its influence on the market-related determinants of farmer behaviour) and producer organizations. The approach of the project to promoting constructive engagement of the private sector at national, regional and global levels, is set out in more detail in Section 4 on Private Sector Engagement.

230. The project will therefore bring together relevant Government actors (from a range of ministries including, but not necessarily limited to, MONRE, MARD and MPI) and the main private sector corporations sourcing rice from the Delta, to develop jointly an overall Framework for Action that will define core commitments, verifiable actions, and timebound targets for progress. This will build on and learn from the strong and diverse baseline of public-private partnerships and multi-stakeholder collaboration for rice value chains presented in the baseline description (section 1a 2), such as the Partnership for Sustainable Agriculture in Vietnam (PSAV), the Gender Transformative and Responsible Agribusiness Investments in South East Asia (GRAISEA) programme, the Development of Sustainable and Inclusive Rice Value Chain for smallholder producers in Vietnam programme, the Green Innovation Centres supported by GIZ, the GIZ-BRIA II/Market-oriented Smallholder Value Chains Project (MSVC) and the SNV MAM-II.

231. In order to avoid an excessive proliferation of platforms and other dialogue spaces, the development of this framework will if possible be carried out using the space created by the multi-stakeholder platform proposed under Output 1.1.1.

232. The project will also support the main private sector value chain actors in developing action plans to deliver on their commitments to sustainability: if possible, common action plans will be developed among networks of upstream and downstream value chain actors committing them to collective actions on key issues (experiences in the global cocoa sector, for example, has shown that such collaboration provides an effective and efficient way to support change and grow companies? leverage, and that harmonised approaches by retailers are preferred by supply chain partners)[91].

233. The project will also focus on building networks among farmers and farmer organizations, based on their mutual interests in improving quality and accessing higher value markets for

products in specific value chains. The building of these networks will include, for example, the formulation of strategic action plans and risk management plans, and the definition of specific roles and responsibilities of different members in accordance with their respective areas of capacity and comparative advantage.

Output 2.2.2 Value chains are established/operating that provide incentives and support to farmers to manage rice landscapes and production systems in accordance with environmental sustainability and GEBs

Output indicator target: *3,000 farmers (of whom at least 10% are ethnic minorities and 30% are women) participating in value chain networks that contribute to ILM and GEBs*

234. The effective transformation of the rice-dominated landscapes of the Mekong Delta towards sustainability is dependent on the existence or potential development of favourable value chains for sustainably produced rice, as well as for other landscape products that may substitute or complement rice as a result of the policy of productive diversification and the move away from triple to double rice cropping.

235. The project will support value chain studies of the products of the production systems that are considered as potentially sustainable options in the target landscape, in order to determine their market potential and to identify needs and opportunities for strengthening of the value chains to favour farmers and to generate leverage of environmental benefits. The results of these studies, together with studies carried out by other actors and projects, will be channelled in accordance with the knowledge management strategy to be developed at project start under Outcome 4.2, alongside information on productive viability and social and environmental sustainability.

236. The project will also strengthen farmer organizations for participating in green value chains. Research worldwide has shown that smallholders can effectively access certified markets only through group certification, by associations or cooperatives, or as part of outgrower schemes in contract farming situations. This is linked to the importance of economies of scale and the tendencies towards vertical coordination found in certified value chains[92].

237. For the options that are prioritised on the basis of these value chain studies, and through participatory processes with farmers (such as workshops and farmer field schools), the project will invest in strengthening relevant rice landscape value chains order to optimise benefits for farmers and leverage of environmental benefits. Specific needs for strengthening are likely to include, for example:

- Improved linkages between farmers and purchasers, in order to clarify needs in terms of product types, quality, reliability and sustainability;
- Favourable trading conditions, and improved capacities among farmers to negotiate such conditions;
- Improved capacities for value-adding, branding and marketing;
- Improved capacities in farmer organizations for obtaining group certification and accessing certified markets.

Output 2.2.3 Value chain sustainability standards applied, improved and validated in order to address ILM and location-specific GEB issues

Output indicator targets:

- *3 value chain sustainability standards applied, improved and validated*
- *1,500 farms where sustainability standards (e.g. SRP, Organic) are monitored and applied to guide adaptive management*

238. Sustainability standards allow private sector actors to ensure and demonstrate that the value chains in which they participate are in compliance with corporate sustainability commitments; they allow consumers to have confidence that products are sustainably produced; and they allow complying farmers to access reliable and, in some cases, preferential markets for their produce. The promotion of field/farm level sustainability standards under this component will form part of the multi-level framework for adaptive management that will be established as Output 1.4.1.

239. The project will focus in particular (but not to the exclusion of other standards) on the Sustainable Rice Platform (SRP) Standard (see paragraph 163): although its overall market insertion is still limited, this is already widely promoted, applied and accepted by notable value chain actors in-country and throughout the region, and is on the one hand relatively easily

attainable, and on the other wide-ranging in terms of the types of social, environmental and other issues that it addresses.

240. The project will pilot the application of this requirement in practice: this will complement and build on the various existing initiatives in the Mekong Delta that are promoting the application of the SRP Standard. Through participatory processes involving consultations with farmers, value chain actors, Government and researchers, the project will help farmers to identify the standards that best meet their needs, and support them in defining the location-specific management refinements that are needed in order to optimise environmental outcomes. This will involve, for example, the identification and mapping of specific biodiversity values (at species and ecosystem levels) in, or in the vicinity of, sites where the Standard is to be met; the characterisation of their ecological requirements; and, on the basis of this, the definition of specific management practices that need to be applied in order to meet the Standard (in these cases, monitoring would focus principally on compliance with the resulting management recommendations, rather than direct monitoring of impacts on biodiversity).

241. Where relevant, these location-specific management requirements will also address landscape-level issues such as connectivity and ecosystem services flows: for example, in priority areas of connectivity between wetland remnants, the Standard may require the management of irrigation regimes and water management infrastructure to be adjusted to facilitate the movement of short-range floodplain migrant fish species during certain times of the year; pesticide use may be more limited in areas of particular importance for waterbirds, in order to protect populations of aquatic fauna on which they prey; and flood management regimes may have to be adjusted in specifically prioritised areas in order to favour aquifer recharge and flood retention.

242. Where appropriate, the project will also work with farmers, the private sector and Government to investigate alternative or complementary sustainability standards and certification schemes, such as Organic and Global GAP Standards, as well as Participatory Guarantee Schemes (see paragraph 164 for a discussion of these alternatives). Each of these options will be assessed in terms of the degree to which their requirements have the potential to deliver benefits for biodiversity, ecosystem services and landscape sustainability; their practical feasibility, including the costs and difficulty of compliance and administration; and their potential to generate leverage of market benefits in terms of reliable market access or premium prices.

243. In addition to supporting the development, local refinement and piloting of the application of these standards, under Output 2.1.1 the project will strengthen public and private extension systems in providing technical support to farmers to be able to meet the requirements of the standards.

244. Support to validating the application of these standards will also address issues of the monitoring of farmer compliance with their criteria, and the communication of the results of this monitoring, as an aspect of the adaptive management approaches that are necessary to help value chain actors understand progress against the standards, as well as spillover benefits. Under this output, the project will focus on validating the practical application, at field level, of the relevant elements of the multi-level framework for adaptive management proposed under Output 1.4.1, including the integration of field-level standards with other (typically higher level) frameworks including TAPE and NBS.

245. GEF-funded support to the adoption of sustainability standards will be complemented by FAO cofinancing, in the form of a USD400,000 TCP project that will support the National Plant Health Strategy, in collaboration with the Plant Protection Department of IPSARD: this will include investments in raising awareness on Integrated Pest Management and the use of economically attractive market-based instruments as the SRP as leverage for this.

Output 2.2.4 Value chain information management and traceability systems established

Output indicator target: *4 value chains with effective information management and traceability systems in place*

246. The effectiveness of the food systems approach to be applied by the project, including working with global value chains to generate leverage of environmental sustainability benefits, is dependent on effective coordination and information flow along the length of the value chains. For example, reliable information on the traceability of produce from certified farmers through to consumers is vital to ensure the credibility, and therefore the market value, of certification schemes; while companies require reliable data on the magnitude of uptake of sustainability

standards (such as SRP Standard) by the farmers participating in their value chains, in order to gauge the effectiveness of their corporate sustainability commitments, as well as data on the locations of sustainability-compliant farmers in order to be able to source produce reliably and efficiently.

247. The project will work with producers and corporate actors in the value chain to define their needs for information management on value chain functioning and traceability; help them to identify the information management systems that best meet their needs; and provide support to enable them to tailor the systems to their specific needs and to issues related to sustainability within the contexts of the target landscapes, and to generate the relevant information and input it into the information management systems. A number of commercial information management systems are available which can meet these needs, such as CropIn (www.cropin.com), SourceTrace (www.sourcetrace.com) and the ?STICKY? Next Generation Rice app developed by Peterson PIL.

248. The value chain information management system will be integrated with the digital M&E platform proposed under Output 4.1.2, for the exchange of data, increasing efficiency in data collection and monitoring (see also paragraph 258).

Component 3. Conservation, management and restoration in forests, wetlands and farming systems to favour ecosystem services

Responsible institution: MONRE

249. As described in Box 4 above, the conservation and restoration of ecosystems constitutes an essential pillar of the ILM approach: in addition to their inherent environmental values in terms of biodiversity and carbon stocks, they generate ecosystem services of importance for productive sustainability, livelihoods and human health. Activities under this component will thereby complement those under Component 2, focused on sustainability in production systems (the other main pillar of ILM): complementarity and synergies between these two pillars will be optimized through the landscape-wide analysis, dialogue, planning and decision-making processes to be supported under Component 1, within the overall framework of Resolution 120, the Mekong Delta Master Plan and Provincial Master Plans (as they are developed).

Outcome 3.1 Conservation, management and restoration practices in forests, wetlands and farming systems contribute to the generation of ecosystem services and are sustainably and equitably financed.

Outcome Indicator Target: 151,200 ha proposed for restoration, with management planning instruments in place together with provisions for governance and financial sustainability

250. As shown in Figure 14, there are a number of ways in which management practices in one part of the landscape affect flows of ecosystem services, with implications for the interests of stakeholders elsewhere. The unsustainable management and degradation of the delta landscape, and its production systems and remnant natural ecosystems, also affects broader national and global interests, due to its negative implications for the sustainability of national and global food supply, for social and demographic stability at national and regional levels, and for global environmental values (e.g. GHG emissions and biodiversity).

251. The modifications to management practices in production systems, proposed under Component 2 also constitute restoration measures, given their potential to contribute to the recovery of on-farm biodiversity, ecosystem functioning and environmental services (e.g. natural pest control processes, nutrient cycling and aquifer recharge). Examples of these modifications, which will be selected in accordance with the criteria set out in Box 6, are presented in Box 7 and selected options (water management strategies for rice, conservation agriculture and direct-seeding mulch-based cropping, diversification of double rice cropping systems with non-rice crops and cover/relay crops; and rice straw management) are described in more detail in Annex Y.

252. Investments under Component 3 will focus on additional options specifically focused on maintaining or restoring ecosystem services. Subject to technical studies to be carried out during implementation (under Output 3.1.2), together with in-depth consultative processes with local stakeholders, PPG studies suggest that restoration investments will include for example:

- The active restoration (through planting and bank stabilisation) of river bank/gallery vegetation, in order to reduce processes of erosion that have been accelerated by the reduced sediment loads in the Mekong system;

- The active restoration (through planting) of coastal mangroves, in order to help buffer the sustainable landscape management and production options supported by the project against the effects of sea-level rise;

- The active removal of obsolete or unnecessary physical barriers (irrigation weirs and sluices) in water courses, in order to restore biological connectivity for aquatic fauna (thereby generating biodiversity benefits for migratory fish and improving the condition of fisheries resources;

- Modification of water management systems around Tram Chim wetland PA, in order to restore ecosystem function. As further detailed in Annex N, the project will work with provincial Governments and farmers to analyse and implement options for a progressive transition towards the reestablishment of natural waterflow regimes in the productive landscapes in which the National Park is located, through a combination of dike removal, planned management of waterflow through remaining dikes, and the associated reintroduction of production systems that are adapted to seasonal flooding. This will be supported through a combination of direct investment in the removal of water management infrastructure, the provision of technical assistance for the application of reduced-intensity diversified production systems, support to community-based governance/management of water flows, and the local fine-tuning of SRP criteria to include these management practices;

Output 3.1.1 Management plans for key landscape zones of priority for biodiversity and ecosystem services

Output indicator target: *2 management plans covering 15,000 ha*

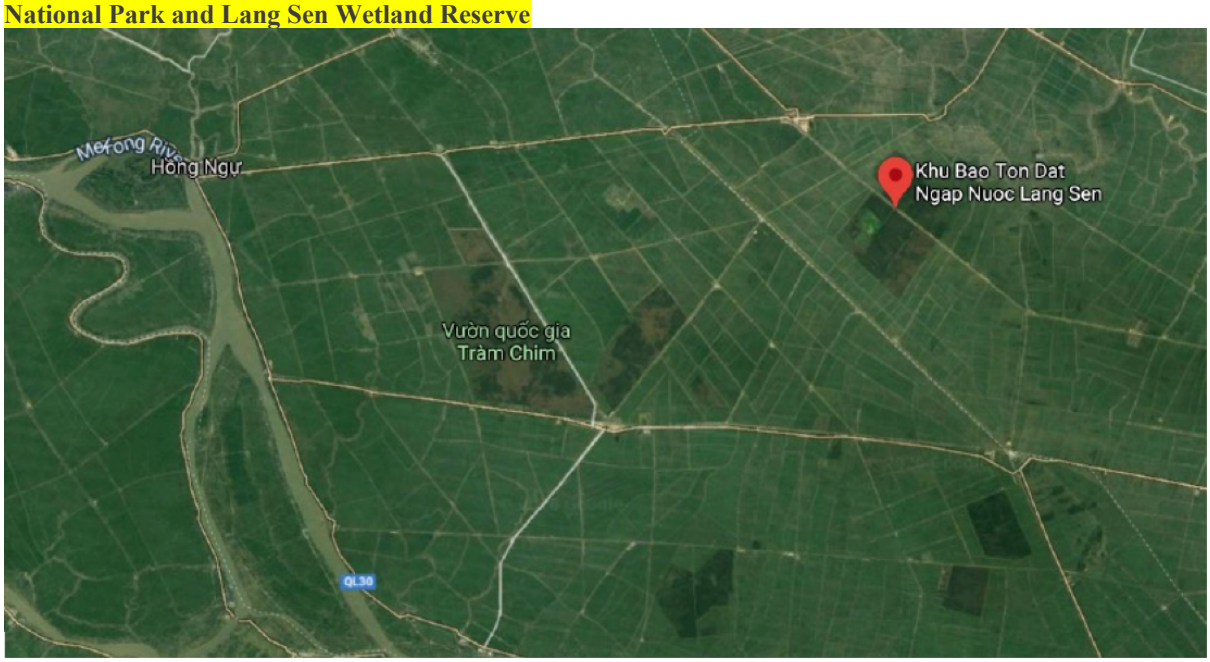
253. The project will support provincial Governments (DONRE and DARD) in working together to identify areas of highest priority for conservation and restoration, from the landscape perspective, in terms of their contribution to biodiversity (e.g. habitat and connectivity), ecosystem services and nature-based solutions (e.g. functions of buffering coastal areas against wave impacts, aquifer recharge). This process will be supported by evidence-based information inputs and GIS-based analysis tools, generated under Component 4.

254. The project will then support the co-definition (with participation from DONRE, DARD, local communities and NGOs) of management proposals for these areas, focusing on reducing threats to them and maximising their value in terms of biodiversity and ecosystem services.

255. The continuity of conservation and restoration activities, and the sustainability of their impacts, will be promoted through the co-formulation (with participation from DONRE, DARD, local communities and NGOs) of management plans for the prioritised areas, including proposals of options for sustainable management and use (supported under Outcome 2.1 and informed through Outcome 4.1), market-based instruments (supported under Outcome 2.2) and PES (supported under Outcome 3.1). In the declared protected area of Tram Chim, where a PA management plan already exists, the project will support management planning at broader landscape-level, including managing the area between Tram Chim and the other important wetland PA of Lang Sen (which lies outside of the direct target area of the project) to promote connectivity.

256. In relation to the declared protected area of Tram Chim, where a PA management plan already exists, the project will support management planning at broader landscape-level around the PA, including managing the area between the Mekong mainstream, Tram Chim, and the other important wetland PA of Lang Sen (which lies outside of the direct target area of the project) in order to promote connectivity. This may involve, for example, prioritizing the areas located in this corridor for the removal of obsolete or unnecessary physical barriers in water courses, and for the restoration of river bank/gallery vegetation, and for the restoration of flood-based production systems.

Figure 17. Priority area for connectivity between the Mekong mainstream, Tram Chim National Park and Lang Sen Wetland Reserve



Output 3.1.2 Investments in restoration of priority areas in terms of BD and ecosystem services

Output indicator target: *2 restoration initiatives under implementation*

257. Technical studies will be carried out under the project, supported by the information resources to be developed under Outcome 4.1, to identify and prioritise areas in specific need of restoration to recover habitat values and/or ecosystem services, within the overall framework of prioritisation and management planning proposed under Output 3.1.1.

258. The project will then support the formulation of technical proposals for restoration, in consultations with experts and local stakeholders. In order to maximize the probability of local acceptance of restoration initiatives, and communities? buy-in to the follow-up protection and maintenance of the areas that have been restored, the project will seek wherever possible to meaningfully involve communities directly in the restoration activities, and encourage collaborative management, access and benefit-sharing through such village level agreements and mechanisms (e.g. *cam ket, quy uoc and huong uoc*).

259. In order to optimize the incremental use of GEF resources, the project will as a first option aim for investments in restoration to be financed through leverage of private sector investment linked to green value chain initiatives, and secondly through incentive and PES mechanisms. The project will also set aside GEF resources for direct investment in restoration, but this will be used in a highly targeted way on high priority cases where opportunities do not exist for leverage of investment in restoration by other parties within the necessary timeframe.

260. The project will also invest in developing the capacities of DONRE, DARD, local communities, famers? cooperatives and NGOs in technical aspects of restoration with potential to maximize biodiversity benefits, ecosystem services and sustainability.

Output 3.1.3 Functioning incentive/PES mechanisms tailored to optimize flows of ecosystem services

Output indicator target: *1 incentive/PES scheme implemented (area covered to be defined during project implementation*

261. In some cases, it may be necessary to negotiate strategies to achieve changes in the behaviour of stakeholders in ?service providing areas? in order to mitigate negative effects on impacted areas and stakeholders. In order to ensure long term effectiveness and social sustainability, these strategies may need to include mechanisms to compensate effectively and equitably the financial or other costs of carry out such changes.

262. There are two key pieces of legislation in this regard (see Decree 99 therefore provides for payments for ?off-site?, landscape-level benefits such as watershed services, but is limited to forests; Decree 66 covers wetlands but only explicitly refers to ?on-site? benefits. The project will pilot a model combining the provisions of these two Decrees, involving payments for landscape-level services from a range of non-forest land uses, including both wetlands and agricultural production systems, as well as mangrove forests.

Box 16. Key legislation in relation to the incentives/payments for environmental services

- In 2010, Government Decree 99 mandated the national policy on payment for forest environmental services (PFES), requiring users of forest environmental services to make payments to suppliers of these services. Services, as outlined in Decree 99, include: watershed protection; natural landscape beauty protection and biodiversity conservation for tourism; forest carbon sequestration and the reduction of greenhouse gas emissions through the prevention of deforestation and forest degradation; and the provision of the forest hydrological services for spawning in coastal fisheries and aquaculture. On 2 February 2016 the Government of Vietnam issued the Decree No. 147/2016/N?-CP on amendment and supplement to a number of articles of the Decree no. 99/2010/ND-CP[93] dated September 24, 2010 on policies for payment for forest environmental services (PFES)

- The recently-passed Decree No.66/2019/ND-CP on Conservation and Sustainable Use of Inland Water Areas provides for benefit-sharing, allowing proceeds to be used for management and conservation of wetland diversity. Its definitions of benefit-sharing activities in this context are however limited to a) Direct exploitation and use of values and products from critical wetlands, including fishing, aquaculture, forest product exploitation and natural resources exploitation; b) Activities of exploiting and using intangible values, including: eco-tourism, scientific research and training, product promotion, images of critical wetlands and protected areas wetland survival.

263. GEF resources will be used to help bring this about by:

- Characterisation and valuation of ecosystem service and impact flows (through the natural resource accounting studies proposed under Output 4.1.1)
- Technical, social and economic feasibility studies of management and restoration options for promoting ecosystem flows (the results of which will be managed through the clearing-house mechanism proposed under Output 4.1.2)
- The co-generation, through facilitated dialogue among landscape stakeholders, of proposals for incentive/benefit sharing and allocation/PES schemes of relevance to the identified ecosystem service flows. This will be carried out in close collaboration with SNV, building on their work and experiences to date with the MAM-II project, which has been working on mainstreaming PES for sustainable mangrove-shrimp aquaculture into national and provincial development plans and supporting the building of a local PES policy in aquaculture (see under paragraph 139).
- The facilitation of the co-implementation (with DONRE, DARD, local communities, private sector, NGOs) of pilots of the application of incentive/PES schemes.

264. Subject to the results from these pilots, the project will support MARD and MONRE in generating proposals of further regulatory instruments to provide a formalized legal basis for addressing PES under these conditions.

<u>Component 4.</u> Knowledge Management and M&E

Responsible institution: MONRE

Outcome 4.1: Project implementation is based on RBM and responds effectively and adaptively to the results of monitoring

Outcome indicator target: 100% of targets set out in project annual work plans and budgets are based on the results of M&E

Output 4.1.1: Project monitoring and evaluation plan and system developed and implemented

Output indicator target: *100% of project indicators measured in accordance with M&E plan*

265. The objectively measurable SMART indicators set out in the project results framework and indicative M&E plan (cross reference) will be operationalized at project start through the

formulation and implementation of a more detailed M&E plan and system through a consultative process. These will specify responsibilities and (to ensure consistency over time) measurement methodologies, as well as procedures for analysing and reporting on M&E results.

266. The M&E system will also include a selection of indicators that are standardized across the FOLUR Impact Programme as a whole, in order enable monitoring of the cumulative impacts of the IP, and also indicators standardized among Sustainable Rice Landscapes Initiaves (SRLI) projects across the region in order to monitor programmatic impacts of the SRLI. The formulation of selected indicators will also allow them to track the project?s contribution to Sustainable Development Goals (SDGs).

Output 4.1.2: System for adaptive results-based management of the project

Output indicator target: *100% of project board meetings and annual work planning processes are informed by M&E results*

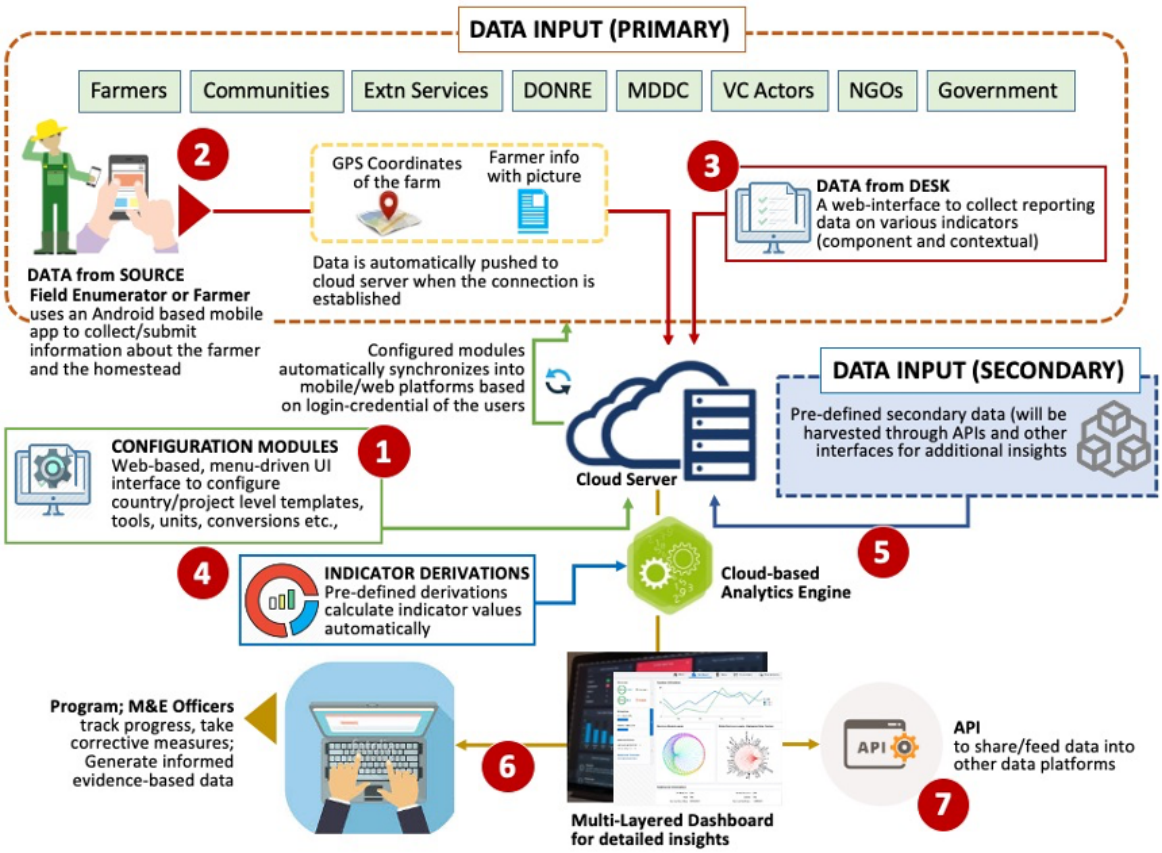
267. Mechanisms will be incorporated into the project management structure for ensuring that M&E results are used to guide adaptive results-based management (RBM). Adaptive RBM will be applied on a continuous basis through the project implementation period based on continuous feedback from the project implementation team and stakeholders (facilitated through the project?s stakeholder participation mechanisms), as well as periodic measurements of project indicators in accordance with the programme set out in the M&E plan; the annual meetings of the Project Board, annual reporting of progress to GEF through Project Implementation Reviews (PIRs), and the external mid-term review (MTR) in particular, will provide more substantive opportunities for results-based management adaptation.

268. This will result in the co-formulation of an RBM plan to which Government partners will be fully ?bought in?, including provisions for corresponding capacity development and the proposal of an exit strategy allowing the framework to be taken on by relevant Government institutions (particularly MONRE and MARD) in accordance with their needs and interests.

269. Executing the RBM framework will require quality monitoring data and analyses in real-time. The project will adapt, customize and implement the digital M&E system that has been developed by ICRISAT[94] for agriculture research for development projects. The mobile- and web- based platform enables quality geo-reference-based data collection with real-time tracking and actionable insights for course correction and implementation. The customized platform will: (i) through pre-defined templates, enable the collection of geo-tagged data of the communities, producers, farmers, farmland, value-chain actors, interventions, and capacity building activities in real-time from the source of the data; (ii) enable the collection and aggregation of periodic reports, updates, and information from implementing partners, government and research institutions, NGOs, actors and other stakeholders; (iii) harvest M&E related information from different secondary sources; (iv) track the indicators and progress in project implementation; (v) provide spatial distribution of the project intervention sites and its adoption; and (vi) provide a web-based, multi-layered dashboard to visualize the reported data both spatially and temporally.

270. The platform customized at the project level will be deployed on a cloud server and will be configured by the country project team to define the templates, user roles, access, and dashboards. The reporting templates will be designed and digitized into the platform following extensive consultation with the project teams. The reported data will be visualized in an insightful and interactive dashboard along with suitable derivations for the indicators in the different frameworks.

Figure 18. Schema of the project-level configurable architecture for the M&E/RBM platform



271. In addition, opportunities will be explored during project implementation for linkages between this system, which is specifically focused on supporting the RBM system of the project itself, and the needs for monitoring and traceability under Outputs 1.4.1, 1.4.2 and 2.2.4. Such linkages may take the form of flows of information on methodological approaches and tools for digital information management, as well as the direct flow of data (for example, the indicators for Outcomes 2.1 and 2.2 are directly relevant to supporting adaptive management of sustainability standards).

Outcome 4.2: Coordination and knowledge exchange at national, regional and global levels enable the project to contribute effectively to programmatic efforts to further sustainability in food systems and landscape management

Outcome Indicator Target: Knowledge is exchanged and efforts coordinated at national and global actors at least every 3 months, within the framework of the FOLUR global platform and/or regional hubs

Output 4.2.1: Knowledge management, learning and communication strategies are developed and implemented

Output indicator target: *Lessons learned and knowledge generated or acquired reviewed on a monthly basis*

272. The project will accumulate and manage a resource of knowledge that will serve to guide its own implementation as well as supporting the scaling up and scaling out, at landscape, national, regional and global levels, of the models of integrated landscape management that it will be supporting, within the context of the Mekong Delta Master Plan. In order to optimize the capitalization and utility of this knowledge resource base, the project will establish a structured system for knowledge management and communication, based on detailed assessments of the needs and capacities of target stakeholders, together with a plan, co-developed with the stakeholders, for the management and sustainability of the system. The digital M&E platform and the knowledge resource base will be tightly integrated for unified knowledge sharing and dissemination.

273. The knowledge management system will support the continuous capitalization of the knowledge resource base through a combination of:

- Participatory knowledge exchanges among stakeholders at farmer and community levels;
- Communication of results and messages among District and Provincial Governments regarding challenges, impacts, benefits and lessons learned with the application of the ILM model of the project;
- Reviews of the reported results of institutions and projects to date, and their discussion in workshops;
- Continuous review of energing research results reported in academic literature;
- Knowledge inputs from regional and global knowledge hubs and research institutions, with the support of the global coordination platform of the FOLUR IP
- Systematic collation of lessons learned through the project itself, based on regular reflections involving project staff, beneficiaries and partners, and supported by quantitative data generated through the project M&E system.

274. Procedures will be incorporated into the project planning and decision-making system for these knowledge resources to be fed into and adaptively guide project strategies and management.

275. In parallel, the project will implement a strategy for outreach of its knowledge resources to its target audience for scaling up and scaling out. These will include policy makers; national and local institutions responsible for oversight and promotion of landscape management strategies, and for the implementation of the provisions of the Mekong Delta Master Plan; producers and their organizations; and agencies implementing parallel initiatives. A detailed plan to be developed at project start will propose specific mechanisms for outreach and communication tailored to the needs and characteristics of each of these audiences.

276. In coordination with and with support from the global coordination platform of the FOLUR IP, the project will also contribute its knowledge resources to regional and global knowledge hubs. Given the concentration of rice production, rice-dominated landscapes and rice-focused projects in SE Asia (see Table 8), and the regionally-specific nature of many rice-related issues, it will be beneficial for knowledge on rice-related issues to be managed and exchanged primarily within the regional itself. The Sustainable Rice Landscape Initiative (SRLI) is an example of a potential framework for this (see Box 20).

Output 4.2.2: Mechanisms are developed and applied to coordinate the project with global, regional and transboundary efforts under the FOLUR IP

Output indicator target: *The project is coordinating efforts with other countries to address 100% of the global, regional and transboundary issues identified by the FOLUR Global Platform (GP) and/or regional hubs as being of relevance to the project*

277. Under the guidance of the Global Platform of the FOLUR IP, project strategies and activities will be formulated and programmed in such a way as to optimize their contribution to the IP at regional and global levels. In addition to the two-way exchange of knowledge resources proposed under Output 4.4.1, this will include, for example:

- Coordination of communications and partnerships with private sector actors operating acroess multiple countries in order to maintain clarity, consistency and cost-effectiveness, and maximize the magnitude of impacts on regional and global markets.
- Coordination and harmonization of activities between countries in order to minimize the risk of transboundary leakages of impacts.

278. Budgetted project activities related to the FOLUR GP will include those listed in Box 18:

Box 17. Budgetted project activities related to the FOLUR GP

- Participation in Global meetings of FOLUR partners and CPs
- Participation in Regional commodity platform gatherings / discussions with private and public sector representatives
- Participation / contribution to training workshops, regional communities of practice (sharing knowledge, successes)
- Contribution of achievement and success stories for the FOLUR IP Annual report
- Engagement with media within country, as well as consultation toward annual work planning
- Contributions to global knowledge products and flagship reports (peer reviews, technical inputs)
- Annual M&E results reporting to the GP for consolidation and reporting to GEF.

279. Similar strategies will be used to ensure that the project (as part of the Sustainable Rice Landscapes Initiative) is coordinated with the Sustainable Rice Platform and its public and private members: this will facilitate access by the project to technical and financial resources and value chain opportunities, and at the same time will allow lessons learned through the project to contribute to regional and global knowledge on approaches to integrated, inclusuive and sustainable management of rice landscapes.

4) Alignment with GEF focal area and/or Impact Program strategies

280. The project leverages local-national government and public and private stakeholders to address underlying drivers of unsustainable production systems and integrate across IP objectives to address systemic challenges identified earlier in this document by:

- Strengthening policy and institutional frameworks for ILM and Sustainable Food Systems that bring together multiple government, private sector and community stakeholders at landscape level to effectively plan and implement plans for sustainable agriculture value chains nested in healthy agriculture landscapes.

- Scaling-up climate-smart, eco-friendly and gender-sensitive farming production practices and diversification through application of agreed local, national and international rice standards via a mix of proven participatory approaches such as FFS and PGS and enabling industry stakeholders/actors to enhance sustainable value chains and products, with significantly reduced environmental impacts (***IP Objective 1****, Promoting sustainable food systems to meet growing global demand*).

- Enabling smallholders women and men farmers to access incentives for sustainable rice production practices and alternatives to intensive rice monoculture including diversification with aquaculture-rice integrated systems, rotations with other crops that can also increase wetland biodiversity, land restoration and reduce environmental pollution (***IP Objectives 1 and 3****, Promoting restoration of degraded landscapes for sustainable production and to maintain ecosystem services).*

- Facilitating restoration of degraded ecosystems and agrobiodiversity in key rice-production landscapes through ILM and adoption of nature-based solutions to promote resilience and improved water management based on landscape-level hydrology analysis, spatial planning, and use of nature-based infrastructure solutions (***IP Objective 3***).

281. The project is also in accordance with GEF-7 focal area objectives, as shown in Table 6:

Table 7. Alignment of project elements with focal area objectives

Focal area objectives	Project elements/approaches

Biodiversity: *BD1-1, Mainstream biodiversity across sectors as well as landscapes and seascapes through biodiversity mainstreaming in priority sectors*	- Support to spatial and land-use planning to ensure that land and resource use is appropriately situated to maximize production without undermining or degrading biodiversity; - Improving and changing production practices to be more biodiversity-positive (with a primary focus on the agriculture sector), through technical capacity building and implementation of financial mechanisms that incentivize actors to change current practices that may be degrading biodiversity; and - Supporting policy and regulatory frameworks that remove perverse subsidies and provide incentives for biodiversity-positive land and resource use that remains productive but that does not degrade biodiversity.
Climate Change: *CCM-2-6, Demonstrate mitigation options with systemic impacts for food systems, land use and restoration impact programme*	- The promotion of synergies between CCM and the simultaneous delivery of other global environmental benefits (biodiversity and sustainable land management) through integrated management of landscapes and farming systems, supported by information management and decision-support systems to address trade-offs.
Land Degradation: *LD-1-1, Maintain or improve flow of agro-ecosystem services to sustain food production and livelihoods through Sustainable Land Management (SLM)*	- The promotion of diversified agro-ecological food production systems to improve productivity and maintain or improve flow of services that underpin food production and livelihoods; innovative approaches to support the efficient use of land, soil, water, and vegetation in crop production systems; and private sector involvement, to link smallholder producers to markets, introduce sustainable supply chains, and create stable revenues based on sustainable management and production. - Integrated landscape management and restoration, transcending political and administrative boundaries (while respecting and promoting jurisdictional frameworks and responsibilities for action), aimed at maximizing the delivery of multiple benefits in the context of food security and livelihoods.

5) Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing;

282. GEF resources will be used in a highly targeted, incremental and complementary manner, where possible using strategic partnerships with other (cofinancing) initiatives in order to maximize leverage of impact, in order to to develop lasting capacities, systems and instruments among Government entities (at national and provincial levels), local communities (including producers) and their institutions, and private sector actors to implement and sustain a model of integrated landscape management (ILM).

283. Figure 19 shows how GEF resources will be used in partnership with other initiatives to deliver a sustainable legacy of capacities among national institutions.

284. Key elements of the incremental approach of the project, that will serve to maximize and optimize the impact achieved from relatively limited GEF resources, are as follows:

1) Strengthening capacities and instruments to allow the (baseline) Mekong Delta Master Plan to be implemented (in support of the application of Resolution 120) in such a way as to take fully into account the multiple and interrelated aspects of sustainability and resilience, including landscape-wide flows of environmental, social and productive dynamics and of ecosystem goods and services, and global environmental values/externalities (especially biodiversity and GHG balances).

2) Supporting the integration of multiple aspects of environmental sustainability into the interventions of (baseline) investments by Government and cooperation agencies, which are currently focused primarily and narrowly on climate change resilience and therefore are missing

the opportunity to realize synergies between these different issues. This approach will use these large scale baseline investments as vehicles for the leverage of widescale application of the models promoted by the project.

3) Similarly supporting the mainstreaming of integrated considerations of environmental sustainability into the farmer support programmes of the private sector (see Section 4 on Private Sector Engagement for more detail, and Table C for the specific private sector partners), again using these as vehicles for the large scale leverage of uptake resulting from the targeted injection of limited levels of GEF support in the form of pilots, technical advice, knowledge management and facilitation.

4) Supporting increased sector-wide coherence and inpact in the (baseline) initiatives of private sector actors in the Mekong Delta in support of environmental sustainability in crop value chains, with increased and lasting public/private partnership relations, moving towards a tipping point situation where sustainable sourcing, accompanied with producer support, becomes the norm.

5) The proposal, and support to the application of, sustainable and environmentally-friendly options for the (baseline) diversification away from intensive rice production that is promoted by Government, in the form of alternative crops and/or modified management regimes.

285. Private sector co-financing that will enable the project to deliver this incremental approach totals $58 million, from OLAM, the PAN Group and Loc Troi, and other cofinancing from Government and cooperation agencies (IUCN, GIZ, MONRE and MARD) totals $29 million.

286. The principal contributions of co-financing to the incremental delivery of global environmental benefits through the project will be as follows (please also see the footnote to Table C):

- **IUCN cofinancing** will contribute to project impacts under Outcome 2.1, by supporting the piloting and scaling up of flood-friendly livelihoods in the deep flooded area of the upper delta, and addressing the ?coastal squeeze? in high-vulnerability coastal provinces through the application of nature-based solutions including mangrove protection and restoration, mangrove-shrimp polyculture and recirculating aquaculture systems.

- **MARD co-financing** will also contribute to the delivery of impacts under Outcome 2.1, through investments including ?Smart Agro-ecological Transformation of Farming Systems towards Resilience and Sustainability in the Middle and Coastal Zones of the Mekong Delta?; ?Green Innovation Enhancement in the Agriculture and Food Sector in the Mekong Delta, Viet Nam?; and the implementation of the Master Programme for sustainable and climate-resilient agricultural development in Mekong Delta region towards 2030 with a vision to 2045, including pilot activities for climate resilience models in the Mekong Delta region; a scheme to attract investments in sustainable rice production and value chains; and provision of livelihood support to farmers to change cropping systems.

- **Provincial DARD investments in agricultural extension** will be used as a means for leveraging environmental benefits (although not covered by formal co-financing letters): under Output 2.1.1, the project will enhance these extension systems so that they mainstream considerations of environmental sustainability in their messages to farmers, resulting in expected changes in farmer behaviour, towards sustainability.

- **FAO co-financing** will further support the delivery of environmental benefits under Outcome 2.1 through its Technical Cooperation Programmes (TCPs) ?Support for development of modern business cooperatives for small farmers?, which will generate a tested training package for farmer cooperatives which will be directly transferable for application by the cooperatives participating in the GEF-7 project; ?Pilot project on organic farming systems development and agro-ecotourism for small farmers communities?, which will function as a source of knowledge and experiences on organic farming and agro-ecotourism which will be fed directly into the GEF-7 project for application by its participating farmers and communities; and ?Support for development of National Strategy and Action Plan for Integrated Plant Health Management ? which will support the Government in updating training materials which will be piloted within the area of the GEF-7 project, thereby contributing directly to its aims of promoting IPM and agroecology.

- **Private sector co-financing (from Olam, PAN and Loc Troil)** will contribute to the scale of the project?s impact under Outcome 2.2 by providing market-based leverage in support of sustainable production: this co-financing represents the costs of committing to supporting, and

preferentially sourcing from, selected farmers who comply with sustainability standards (this is explained in more detail in the co-financing letter from Olam).

- **GIZ and Olam co-financing through the GIZ-BRIA II/Market-oriented Smallholder Value Chains Project (MSVC) project** will further contribute to impacts under Outcome 2.2, by creating a pulling effect in farmer adoption of sustainable practices and technology as well as better organisation and management of farmer groups, which is fundamental for long-term sustainability in product value chains.

- **MONRE and GIZ co-financing of Green Innovation Centres** will further contribute to the scale and effectiveness of impact delivery under Outcome 1.3) by helping to ensure that reliable information is available for planning and decision-making processes in the Delta.

6) Global environmental benefits

287. The project will adopted an integrated approach to the management of Mekong Delta landscapes that will deliver multiple interrelated environmental benefits of local, national and regional and global significance. Benefits in relation to each of the selected GEF focal areas will be as follows:

Land Degradation:

Target: 1,099,000 ha of landscapes are under sustainable land management in production systems, and 151,200 ha of landscapes are restored (120,000 ha agricultural land, 1,200 ha of forest and 30,000 ha of wetlands).

288. Overall, the project will contribute to allowing the Mekong Delta to maintain its globally important role in generating food and ecosystem services and sustaining livelihoods, through the adaptive management and protection of its natural capital (soil, water and biodiversity). The project will thereby contribute directly to the GEF focal area objective of maintaining and improving flows of agro-ecosystem services to sustain food production and livelihoods (LD-1-1). This will in turn significantly advance the FOLUR goal of contributing to the sustainability of global food systems, given the global significance of the area as a source of rice both for domestic consumption and for global trade.

289. As shown in Figure 14, the threats to the natural capital of the area, that will be countered by the project, are multiple and operate at both farm and landscape levels. Specifically, the project will contribute to maintaining and promoting the long-term capacity of the Mekong Delta landscape to generate goods and services in a sustainable manner by:

? Reducing pesticide contamination in ricefield systems, through the promotion of nature-based solutions such as integrated pest management that involve the recovery of natural interactions among biological components of the farming system;

? Reducing eutrophication impacts on water bodies used for aquaculture, by promoting integrated nutrient management as an alternative to inorganic fertilisers.

? Maintaining and promoting the agroecological functioning of production systems, through the application of integrated pest management practices as an alternative to the intensive use of agrochemical inputs;

? Maintaining and promoting the overall functioning, resilience and adaptiveness of the landscape, by safeguarding and restoring landscape elements that generate flows of ecosystem services;

? Reducing the degradation and unsustainable extraction of aquifer water;

? Restoring nutrient cycles in production systems by promoting the management of water resources in such a way as to permit seasonal flooding and resulting inputs of nutrient-rich alluvium;

? Reducing the salinisation of agricultural lands, by promoting the restoration of upstream-downstream water flows that contribute to the dilution of salinity, and reducing subsidence (and associated saltwater intrusion) resulting from aquifer over-extraction.

? Restoration of agricultural land, forests and mangroves.

Biodiversity:

Target: **549,500 ha** of landscapes are under improved management to benefit biodiversity and an additional **1,500 ha** of landscapes meet national or international third-party certification that incorporates biodiversity considerations

290. The introduction of improved water management practices, and reductions in the use of agrochemicals, in the areas surrounding Tram Chim and Lang Sen wetland protected areas will contribute to the conservation status and ecological functioning of these areas, which constitute among the last remaining remnants of the Plain of Reeds ecosystem. This in turn will benefit the conservation status of the species to which they provide habitat, such as the globally endangered Sarus Crane.

291. Improved management of water resources, including the modification of water management infrastructure such as dykes and weirs (including, subject to detailed technical studies during the implementation period, the selective elimination of physical barriers to flooding, and the incorporation of fish passes into weirs) is likely to have positive impacts on fish biodiversity, potentially including globally important and rare long-range Mekong migrants. Although paucity of data on fisheries in the area makes it difficult to predict biodiversity benefits with confidence, the effectiveness of this kind of intervantion has been demonstrated elsewhere: in Lao PDR, the reconnection of the Pak Peung wetland and lake to the main channel of the Mekong saw the reappearance of a number of large riverine species (including the IUCN Red List species *Probarbus jullieni*) that had disappeared form the system after it was disconnected by a large irrigation regulator.

292. Improved management of water resources in the Delta, especially the partial re-establishment of natural flooding regimes, will benefit coastal mangroves: these are of global importance as habitat for aquatic and bird species, as well as functioning as breeding and nursery grounds for fishery resources of national and regional importance.

293. The provisions of Requirement 6 of the SRP Standard in relation to biodiversity are shown in Box 19 (as explained in Section 3, the SRP Standard will be used as a reference for sustainable approaches to the management of rice farming systems, to be adapted as necessary to local conditions).

Box 18. Requirement 6 of the SRP Standard in relation to biodiversity:
Rice farming after 2009 has not been causing conversion within a (proposed) protected area, Key Biodiversity Areas?, Ramsar Sites (wetland), primary forest, secondary forest (native), or other natural ecosystems and land types such as prairie.

At the field level, farmer maintains and/or enhances applicable site-specific biodiversity elements:
? In-field habitat/refuge
? Field margins
? Non-cropped area
? Plant species which host beneficial natural enemies
? Trees (replanted if harvested)
? Farming practices maintain and/or enhance ecosystem services.

Climate change:

Target: **12,889,969** tCO_2eq of emissions avoided

294. The project will generate benefits for climate change mitigation through:

- Reductions in the intensity of rice production, and modification of crop and water management practices in rice fields, which will reduce methane emissions associated with flooded rice paddies.

- The promotion of agroforestry in farming systems, which will increase carbon stocks due to increases in the biomass of woody perennials.

- Ecosystem restoration, which will increase content of woody and annual biomass and associated carbon stocks.

Chemicals

295. While the project will not use resources from the Chemicals and Wastes focal area, it will generate significant co-benefits in terms of reductions in levels of chemical use as a result of the proposed reductions in the levels of productive intensity and the adoption of agroecological principles. Based on past experience with 1 Must 5 Reduction extension programme and the findings of surveys by the Mekong Delta Development Research Institute in 2014 in Kien Giang and An Giang provinces (Table 9), it was found that farmers benefiting from this support were able to achieve a 25% reduction in the application of pesticide active ingredients, equivalent to around 1,800 grams/ha in cropping areas. It is anticipated that the project will be able to achieve, at a minimum, similar results with beneficiary farmers.

Table 8. Quantity of pesticides used in rice production in the Mekong Delta, 2014[95]

Control (gram.ai/ha)	Summer-Autumn	Autumn-Winter	Winter-Spring	Whole Year
Control farmers (gram.ai/ha)				
Molluscicides	583.63	321.33	421.74	1,326.7
Herbicides	664.53	570.43	500.83	1,735.79
Insecticides	325.91	334.33	597.87	1,258.11
Fungicides	830.16	838.25	1,034.53	2,702.94
Total	**2,404.23**	**2,064.35**	**2,554.96**	**7,023.54**
Farmers who applied 1M5R (gram.ai/ha)				
Molluscicides	235.2	377.50	292.41	905.11
Herbicides	702.31	480.87	503.18	1,686.36
Insecticides	350.69	242.71	376.47	969.87
Fungicides	406.7	734.63	561.88	1,703.21
Total	**1,694.91**	**1,835.71**	**1,733.94**	**5,264.56**

296.It is foreseen in the Ex-ACT calculations that the project will result in improved management in 20,000 ha of annual crops and 65,000 ha of flooded rice systems, giving a total area of 85,000 ha and a **total projected reduction in pesticide active ingredients of 153,000 tons.**

7) Innovativeness, potential for scaling, sustainability and capacity development ?

297. The project will reflect the overall innovative nature of the FOLUR IP as a whole, by moving beyond conventional ?mainstreaming? approaches focused on individual crops, farming systems of ecosystems, to address the intersections between markets/value chains, food systems, livelihood systems, farming systems and landscapes in an integrated and balanced manner, addressing tradeoffs among diverse global, national and local priorities.

298. Further innovative aspects of the project include the following:

- Its **linkages to regional and global dynamics and opportunities**, resulting from its inclusion in the FOLUR Impact Programme, in particular its links to the Sustainable Rice Platform, and its inclusion in the Sustainable Rice Landscapes Initiative (SRLI), which will in particular have the potential to catalyse systemic transformation (see Box 19). Table 9 shows the scale of the reach of the SRLI throughout the region, and therefore the extent of its potential impact as a regional catalyst for identifying and channelling resources and opportunities, and for managing and exchanging knowledge.

Box 19. The potential for transformation and scaling out through the SRLI

The Sustainable Rice Landscapes Initiative (SRLI) is a partnership of FAO, SRP, the WBCSD (World Business Council for Sustainable Development), GIZ, IRRI and UN Environment. Launched in 2018, during the 6th GEF Assembly meeting in Danang, Viet Nam, the SRLI has created a unique consortium of public, private and civil society partners, bringing together technological, ecological, policy and market-led approaches to the challenges of rice sustainability.

The main objective of the SRLI partners in this initiative is to harness multiple opportunities to meet the growing global demand for sustainable rice and associated benefits, using a public-private partnership approach towards achieving the UN Sustainable Development Goals (SDGs).

Insertion of the project in the regional framework offered by the SRLI will significantly increase its potential to contribute to achieving transformative impact both nationally and across the SE Asia region as a whole, for example as follows:

- The establishment of an action group with SRLI and other partners will facilitate engagement with finance providers regarding the development of blended finance products with potential for application across the region, linked to the provision of technical assistance on sustainable rice production (see paragraph 214).
- Links to the SRLI will increase access by producers in the target area to regional and global value chains, including ?green? value chains that reward environmental sustainability: inter-country collaboration will also allow countries to achieve a critical mass of influence on markets.
- SRLI members have the potential to act as catalysts and conduits for knowledge management spanning the region on the integrated management of rice-based landscapes, allowing to lessons learned through this project and others in the region to be communicated widely and effectively and thereby to guide good practice.
- Regional coordination on M&E, for example through the SRLI, will allow the impacts of the GEF-7 FOLUR IP to be monitored at sub-programmatic (regional) level, thereby allowing synergies among FOLUR/SRLI countries in SE Asia to be captured and collaborative responses to be agreed among participating countries.

Table 9. GEF-7 Rice oriented FOLUR and LDCF projects under development

Country	Funding Source	Project Name	IA	GEF grant ($)	Indicative co-finance (S)
Vietnam	FOLUR	Food System, Land Use and Restoration Impact Program in Vietnam	FAO	5,354,587	83,000,000
China	FOLUR	Innovative transformation of China?s food production systems and agroecological landscapes	FAO/ World Bank	7,179,450	155,000,000
India	FOLUR	Transforming Rice-Wheat Food Systems in India	FAO	20,366,972	230,900,000
Thailand	FOLUR	Inclusive Sustainable Rice Landscapes in Thailand	UNEP	5,535,963	87,000,000
Indonesia	FOLUR	Strengthening sustainability in commodity and food systems, land restoration and land use governance through integrated landscape management for multiple benefits in Indonesia	UNDP/ FAO	16,163,762	147,471,429

Cambodia	LDCF	Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region	FAO	8,932,420	62,263,553
Myanmar	LDCF	RICE-Adapt: Promoting Climate-Resilient Livelihoods in Rice-Farming Communities in the lower Ayeyarwady and Sittaung River Basins	FAO	8,932,420	40,000,000
			Totals	**72,465,574**	**805,634,982**

- Its inclusion of **innovative financing models** including **PES** (which is still in early stages of development in Vietnam, see Outcome 3.1); **blended finance products** (see Outcome 2.1.3) based on the SRP Standard, aiming to leverage debt, equity and carbon markets to open up new opportunities for farmer beneficiaries and communities to access financial resources needed in support of investments in sustainable production and management; and the **AGRI-3 Fund**, under the recently-launched UNEP/Rabobank global Forest Protection and Sustainable Agriculture partnership, which will catalyse private financial resources and function as a role model for developing business models that include acceleration of forest protection and reforestation and implementation of innovative agricultural solutions, whilst improving the living standards of local farmers and smallholders.

- Its specific attention to **Nature-Based Solutions (NBS)** and in particular its structured approach to the definition of opportunities for NBS to play an effective role in relation to identified needs (see Annex AA).

299. Key elements of project design that will maximize the durability and scale of impacts will be as follows (Figure 19 shows how GEF resources will be used in partnership with other initiatives to deliver a sustainable legacy of capacities among national institutions):

- The project will be nationally executed, with the core structure of the Project Management Unit at national and provincial levels fully made up of the Government institutions. In accordance with Government and GEF policies, this will serve to maximise national ownership, and therefore the long-term durability, of the landscape management model to be promoted through the project.

- The project will be linked to the recently established Mekong Delta Coordinating Council[96] as a platform for communicating project actions and results to key stakeholders in the region, in order to promote their awareness and buy-in and to identify and realize opportunities for coordination between the project and other initiatives in the region that may serve as mechanisms for scaling out and sustainability.

- The project will further promote buy-in by stakeholders in the region, resulting in effective outreach, scaling out and sustainability, through the close involvement of Provincial People?s Committees (PPCs), which are the principal governance entities at provincial level established under the Vietnamese administrative system. The members of the PPCs include DONREs and DARDs, through which project actions will be implemented at local level, making the PPCs ideal entry points for project outreach and coordination.

- The project will furthermore establish a multi-stakeholder working group at provincial level, which will serve as a platform for discussing the project (especially between DARD/DONRE technical staff and PPC executives, in order to maximize ownership and relevance), sharing information among provinces, and supporting the preparation of the project work plans (and those of the participating DONREs and DARDs) prior to their submission to the PSC for approval.

- The central basis for the exit strategy of the project is that, during the life of the project and beyond, the institutions responsible for the execution of the project will continue to exercise their designated functions in support of the management of the Delta, its natural resources and its production systems: these functions will be complemented by GEF support, which will be applied in a highly targeted manner to enhance their capacities to deliver and sustain the proposed model of integrated landscape management, drawing where needed on external capacities for the injection of technical and conceptual value-added. Support under Component 1 will help to ensure that the

mainstreaming of ILM approaches is underpinned by policy, regulatory and financial commitments necessary to ensure long-term sustainability

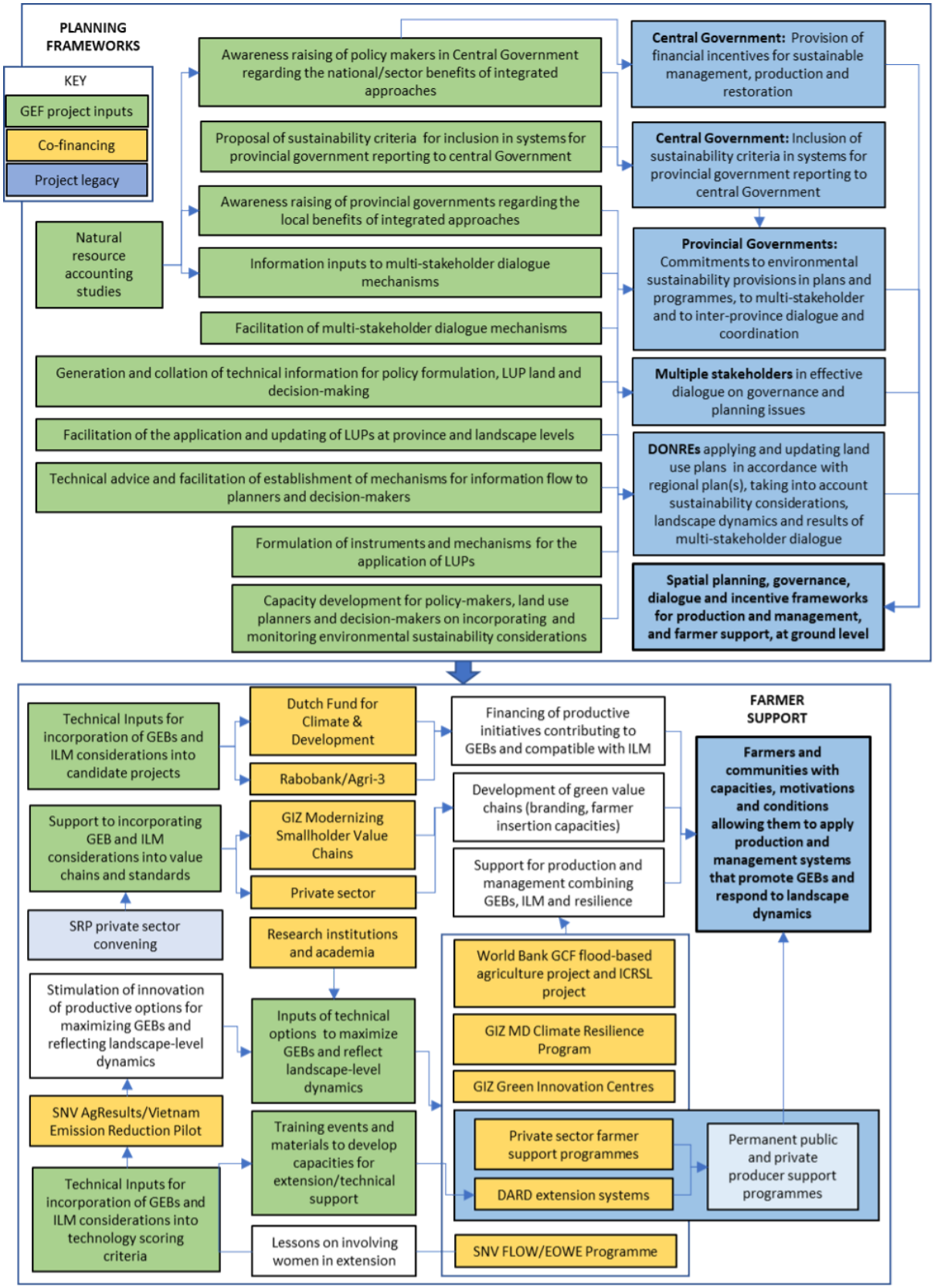
- The project will be innovative in involving both public and private sector actors as key players essential for the delivery of durability and scale of impact. Under overall Government leadership, and in complement to Government initiatives, the private sector will play vital roles in sustaining the production and landscape management model, including through the provision of reliable and favourable markets for sustainably-sourced produce, and of technical and financial support to farmers. GEF incremental support in complement to this will focus, for example, on advising on and facilitating the definition of specific sustainable technical options for inclusion into private sector sustainability criteria and extension systems: the uptake of these inputs by the private sector across their operations will constitute a major opportunity for leveraging scaling out of impacts..

- Social sustainability, and consequently the durability of the uptake and impacts of the proposed management models, will be promoted through the application of a gender-sensitive sustainable livelihoods approach, with a focus on integrating sustainably managed rice and ?diversification? alternatives into diverse farm economies and farming systems that will allow farm families to satisfy their multiple livelihood needs (including nutritious food and cash income) in a sustainable, gender-sensitive, resilient and low-risk way. The definition of such socially-sustainable options will be supported through the application of the Farmer Field School model, which emphasized participatory problem analysis and farmer-based experimentation and technology validation. Gender analysis will used as a basis for identifying the different roles, needs and barriers that women and men have to design curricula and initiatives that promote equal participation and engagement of women and men farmers.

- The proposed modifications to landscape management and production systems will be sustained by linking them to ?green? value chains, which reward sustainable management either through easier and more reliable access to markets, or through price premia; and through the formulation and application of economic incentives to reward the delivery of public goods.

- At the same time, instead of ?locking farmers in? to specific value chains, production options and management models, in a static manner, the project will recognise that the implications of climate change for the Delta are inexorable, and in the long term are likely to affect the viability of most such models. While not specifically designated as an adaptation initiative, the project will therefore place a strong emphasis on enhancing the capacities of national and provincial institutions, and of farmers, to continuously innovate in order to adapt to evolving conditions.

Figure 19. Arrangements for targeting GEF resources to maximize leverage, ownership and lasting impact



8) Summary of changes in alignment with the project design with the original PIF

300. There are no significant changes.

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[81] See footnote to Box 10 on agroecology. Agroecology also includes landscape dimensions, aiming for example at synchronization of productive activities in time and space to enhance synergies. http://www.fao.org/3/i9037en/i9037en.pdf

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[i]

1b. Project Map and Coordinates

Please provide geo-referenced information and map where the project interventions will take place.

Location of the Project Area

Target provinces

Coordinates of Target Province Centre Points

Location	Estimated Coordinates ? Lat/Long
An Giang	10.5070, 105.18360
Dong Thap	10.5720, 105.62772
Vinh Long	10.10109, 106.0019
Soc Trang	9.56604, 105.94551
Tra Vinh.	9.78185, 106.31118

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

The project forms part of the FOLUR Impact Programme and as such its actions will be coordinated and harmonized as necessary with other child projects in the IP, with the support of the FOLUR Global Knowledge to Action (K2A) Platform. Particular attention will be paid to coordination with other projects in the region that are focused on rice landscapes, including the FOLUR projects in Indonesia, Malaysia, Thailand, India and China, and the LDCF project in Cambodia (all of which were under formulation at the time of submission of this project). All of these projects form part of the Sustainable Rice Landscapes Initiative (SRLI) of the multi-

stakeholder, public/private Sustainable Rice Platform, which will constitute the principal mechanism for coordination among them.

The project will take advantage of these frameworks to leverage access to technical and financial resources, and partnerships with global and regional private sector actors, while investing in knowledge management to maximize its contribution to global learning on the integrated management of rice-based landscapes.

Output 4.2.2. of the project focuses specifically on the development and application of mechanisms to coordinate the project with global, regional and transboundary efforts under the FOLUR IP. Under the guidance of the Global Platform of the FOLUR IP, project strategies and activities will be formulated and programmed in such a way as to optimize their contribution to the IP at regional and global levels. In addition to the two-way exchange of knowledge resources proposed under Output 4.4.1, this will include, for example:

- Coordination of communications and partnerships with private sector actors operating acroess multiple countries in order to maintain clarity, consistency and cost-effectiveness, and maximize the magnitude of impacts on regional and global markets.
- Coordination and harmonization of activities between countries in order to minimize the risk of transboundary leakages of impacts.

The proposed relations between the Vietnam Child Project and the FOLUR Global Platform aimed at enhancing project-specific and programmatic (regional and global) impacts are detailed in Annex W of the ProDoc.

The project contributes to the overall program impact by addressing underlying drivers of unsustainable production systems across IP objectives by:

- Strengthening policy and institutional frameworks for ILM and Sustainable Food Systems that bring together multiple government, private sector and community stakeholders at landscape level to effectively plan and implement plans for sustainable agriculture value chains nested in healthy agriculture landscapes.
- Scaling-up climate-smart, eco-friendly and gender-sensitive farming production practices and diversification through application of agreed local, national and international rice standards via a mix of proven participatory approaches such as FFS and PGS and enabling industry stakeholders/actors to enhance sustainable value chains and products, with significantly reduced environmental impacts (***IP Objective 1****, Promoting sustainable food systems to meet growing global demand*).
- Enabling smallholders women and men farmers to access incentives for sustainable rice production practices and alternatives to intensive rice monoculture including diversification with aquaculture-rice integrated systems, rotations with other crops that can also increase wetland biodiversity, land restoration and reduce environmental pollution (***IP Objectives 1 and 3****, Promoting restoration of degraded landscapes for sustainable production and to maintain ecosystem services).*
- Facilitating restoration of degraded ecosystems and agrobiodiversity in key rice-production landscapes through ILM and adoption of nature-based solutions to promote resilience and improved water management based on landscape-level hydrology analysis, spatial planning, and use of nature-based infrastructure solutions (***IP Objective 3***).

●In coordination with and with support from the global coordination platform of the FOLUR IP, the project will also contribute its knowledge resources to regional and global knowledge hubs. Given the concentration of rice production, rice-dominated landscapes and rice-focused projects in SE Asia, and the regionally-specific nature of many rice-related issues, it will be beneficial for knowledge on rice-related issues to be managed and exchanged primarily within the region itself.

2. Stakeholders

Select the stakeholders that have participated in consultations during the project identification phase:

Civil Society Organizations Yes

Indigenous Peoples and Local Communities Yes

Private Sector Entities Yes

If none of the above, please explain why:

Please provide the Stakeholder Engagement Plan or equivalent assessment.

Stakeholder consultation during PPG

Stakeholder engagement events during PPG, and their outcomes, are described in Annex H3. Principal among these were the following:

- National PPG Workshop in Hanoi on 25th September 2019, with a total of 30 participants from central Government, civil society and cooperation agencies.

- Provincial PPG Workshop on 26th ? 27th September 2019, Can Tho, with a total of 30 participants from central and provincial Governments, civil society, cooperation agencies and the private sector.

- Detailed field consultations, November 2019-January 2020, involving 74 people from DARD, DONRE, the Department of Labor, Invalids and Social Affairs, the Farmers? Union, the Women?s Union, cooperative/farmer clubs, and farmers. These more detailed consultations were held, with the facilitation of a specialised social consultation specialist, with stakeholders in the target provinces of An Giang (upstream), Vinh Long (middle stream) and Soc Trang (downstream). These consultations consisted of key informant interviews and focus group discussions, including the use of Participatory Rural Appraisal (PRA) tools.

- Zoom validation workshop, 28th October 2020: this meeting had to be held online given the limitations imposed by COVID-19, but it was attended by representatives of both OPs (MONRE and IPSARD) as well as representatives from all five of the target provinces, who also sent in written comments following the workshop.

Please refer to the Stakeholder Engagement Plan in separate Annex H4.

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be

disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

1. A stakeholder analysis and engagement plan are provided in Annex H4.

Government institutions

2. The principal Government institutions to be involved in the project, and their roles, are summarized in Table 9.

Table 1. Summary of roles of principal Government institutions in the project

Stakeholder	Roles
MONRE	? Head of natural resources and environment sector ? Host to GEF OFP ? Joint responsibility for implementation of Resolution 120 and MDMP ? Principal Operational Partner ? Chair of Project Board ? Provides National Project Director ? **Principal responsibility for execution of Components 1, 3 and 4.** ? Hosts National Project Coordinator and PMU team for Components 1, 3 and 4
IPSARD	? Specialised institute of MARD (which is head of the agriculture and rural development sector) ? Joint Operational Partner ? Member of Project Board ? **Principal responsibility for execution of Component 2**

Stakeholder	Roles
Provincial Governments	? Autonomous administration of provincial territories ? Responsible for natural resources/environment and agriculture issues at provincial level through DONREs and DARDs ? Responsible for implementation of Resolution 120 and MDMP at provincial levels ? Responsible for the formulation and implementation of Provincial Master Plans (PMPs) ? Specific technical involvement, in collaboration with other actors, in relation to the following outputs in particular: - 1.1.1: Hosting and facilitation of multi-stakeholder dialogue on landscape planning and management (DONREs) - 1.1.2: Incorporation of environmental sustainability (ILM/GEB) issues into PMPs (DONREs) - 1.2.2: Inclusion of sustainability criteria into reporting to central Government - 1.3.1: Participation in capacity enhancement on interpreting and applying results of NCA/TSA studies within the framework of the MDMP (DONREs) - 1.3.2: Participation in strengthening of capacities for information management - 1.4.1: Co-formulation and application of landscape level sustainability standards (DONREs) - 2.1.1: Participation in systemic capacity enhancement of extension capacities for promotion of sustainable approaches to production and resource management (DARDs), and delivery of extension support to farmers - 2.1.2: Participation in strengthening of capacities of farmer-based organizations (DARDs) - 2.1.3: Support to farmer organizations in defining financing needs and brokering linkages with financing sources (DARDs) - 2.2.1: Participation in formulation of value chain networks involving upstream and downstream actors based on mutual interest in generating value to commodities through sustainable practice. (DARDs) - 2.2.2: Facilitation/advisory support to the establishment and functioning of green value chains (DARDs) - 2.2.3: Provision of extension support to the application, improvement and validation of farm-level sustainability standards (DARDs) - 3.1.1: Co-prioritization of landscape zones for management and restoration, and co-formulation of management plans (DONREs) - 3.1.2: Participation in management and restoration initiatives (DONREs) - 3.1.3: Facilitation of the co-formulation, negotiation and implementation of PES/incentive schemes

Indigenous peoples

3. A specific analysis of the situations of ethnic minorities in the project area is provided in Annex J. This analysis shows there are gaps between the majority (Kinh/Hoa people) and minorities (Khmer and Cham groups) in many socio-economic aspects in the project sites, especially in Tra Vinh, Soc Trang and An Giang where a large proportion of the population belongs to ethnic minorities. Annex J2 indicates how the project will respond to these differentiated conditions.

4. The results of the analyses presented in Annex J indicate that the project presents no risks to the interests of ethnic minorities that would make Free, Prior and Informed Consent (FPIC) processes necessary prior to project start. Annex J2 indicates how the proposed measures to optimize benefits for ethnic minorities, and to maximize their participation in project management and benefits, will be co-formulated in detail at project start, through highly participatory processes.

Women

5. Please see Section 3.

Private sector

6. Please see Section 4.

Select what role civil society will play in the project:

Consulted only;

Member of Advisory Body; Contractor;

Co-financier;

Member of project steering committee or equivalent decision-making body; Yes

Executor or co-executor;

Other (Please explain)

3. Gender Equality and Women's Empowerment

Provide the gender analysis or equivalent socio-economic assesment.

1. The main findings conclusions of the gender analysis (Annex I.1) include the following:

- More than 20% of the households in the target area are female-headed: female household heads are on average older than is the case with men, and female-led households have fewer members, both of which factors imply reduced availability of labour resources. In addition, overall, women have less free time than men, outside of their productive and reproductive loads. Options for increasing women?s access to employment and income through the project should therefore focus on those which low demands for time and labour resources.

- These options should also recognise that women in general have lower access than men to other factors of production, capital and collateral: at the same time, activities under Outcome 2.1 should seek to redress this situation by proactively developing women?s capacities to gain access to finance and other inputs for production.

- The transition away from rice to alternative crops in the project area has the potential to benefit women, given that employment in the rice sector is currently dominated by men (a situation that is likely to be exacerbated by the mechanisation of harvesting activities, which is one of the areas where women currently dominate). Whether the transition is gender-positive or nor depends on the identity of the diversification option: if it is towards fruit production, aquaculture or cattle, little or no benefit is likely as these are also male-dominated; alternatives that are currently more female-dominated, and so where there is the potential to generate gender benefits through their promotion, include vegetables, pigs and poultry.

- This is also the case with women?s involvement in decision making: men dominate decision-making in rice and shrimp production, but women dominate with alternative food crops including beans and squash, so a shift to such crops has the potential to contribute to women?s empowerment.

- Some of the more gender-positive productive alternatives, such as vegetables and small livestock, are especially prone to risks such as diseases, climate change and price variability. The project should therefore invest in particular in working with farmers (especially women) to co-identify and validate resilience measures for these options, as well as value chains that offer price stability.

- The fertility rate in the target provinces is low (1.75, which is below the replacement fertility level, compared to the national level of 2.05): this may have positive implications for women in terms of reduced reproductive and domestic workload, and potentially increased ability to participate in social, productive and decision-making activities. Women tend to get married significantly earlier than men (Figure 4), especially in rural areas, where it may be particularly

related to reduced opportunities for education and employment: this suggests that, if the project is able specifically to benefit women through the generation of employment opportunities, this may contributing to empowering them regarding their marital decisions.

- Although women are primarily responsible for managing household finances, they are underrepresented in social relations with community and other organizations and in membership of socio-political organizations and People?s Councils. There is therefore a need proactively to promote women?s empowerment in decision-making spheres outside of the household: in the context of this project, especially in relation to decision-making on natural resource management, production and environmental protection. The exposure of women, in particular, to environmental risks such as water quality degradation and pesticides makes it especially important for them to be empowered to have a voice in addressing these issues.

2. Specific actions related to each project output, that will contribute to closing gender gaps in access to and control over natural resources, improving women?s participation and decision making, and generating socio-economic benefits or services for women are shown in Table 11 below (more detail is presented in Annex L).

Table 11. Gender-responsive project actions

Outputs	Project actions
1.1.1 Multi-stakeholder socially-inclusive platform established for dialogue on governance and planning responses to landscape-wide issues in relation to the implementation of Resolution 120	Monitor and actively promote the active participation of women and women?s organizations in multi-stakeholder platforms
	Facilitate the inclusion of gender-related issues on the agendas of multi-stakeholder platforms
1.1.2 Planning, decision-making and management instruments being applied and updated by DONREs, taking into account sustainability considerations, GEBs, landscape dynamics and results of multi-stakeholder dialogue	Advise provincial Governments on including gender considerations into planning, decision-making and management instruments (e.g. land use plans, EIA, land use regulations, environmental norms)
	Facilitate the provision of sex-disaggregated and gender-differentiated data to planners and decision-makers to guide the application of planning, decision-making and management instruments
1.2.1 Evidence-based guidance for policy-makers in Central Government to raise awareness regarding the national/sector benefits of integrated approaches	Include gender-specific considerations in the information and guidance provided to policy-makers regarding the benefits of integrated approaches, for example: - Improved access by women and men, including ethnic minorities, to economic opportunities - Reduced exposure of women to health impacts from pesticides - Improved sustainability in the long run
1.2.2 Sustainability criteria included in systems for provincial government accountability to central Government	Include gender considerations into proposals to Government of sustainability criteria, for example: - Levels of participation of women in decision-making and planning on integrated landscape management and natural resource use
1.3.1 Objective information resources regarding the implications of alternative management scenarios, and national/sector benefits of integrated approaches	Ensure that information resources are (where relevant) gender-differentiated, and specifically refer to aspects with gendered implications
	Advise/train decision-makers on the interpretation of gender-differentiated data
1.3.2 Information management systems in support or planning and decision-making	Ensure the inclusion of management alternatives with specific potential to benefit women
	Ensure that the information on management alternatives includes gender implications, and that the expected costs and benefits are gender-differentiated
	Facilitate access by women, and women?s organizations, to the clearing house mechanism

Outputs	Project actions
	Advise/train users on the interpretation of gender-differentiated data
1.4.1 Multi-level framework for adaptive management established, based on enhanced and locally-relevant indicators of sustainability	Inclusion of gender considerations into indicators of sustainability
1.4.2 Monitoring frameworks for agricultural GHG mitigation including indicators and MRV tools	
2.1.1 Strengthened mechanisms for extension supporting GEBs and ILM	Identify productive options with potential to generate gender-positive impacts, and facilitate their inclusion in the content of extension programmes
	Provide specific training to extension agents on how to recognize and provide for gender-differentiated implications and opportunities in extension programmes
	Motivate the participation of women in FFS including through identification of gendered interests, opportunities and barriers.
	Support the establishment and operation of FFS specifically focused on productive options with potential to benefit women
	Provide specific orientation and facilitation support to FFS participants to enable them to analyze the gender implications of the production systems that they are considering
2.1.2 Farmer organizations with capacities to obtain and manage inputs needed for sustainable production	Ensure representative participation of women in capacity development and in processes of definition of needs
2.1.3 Financing services available to farmers as a result of project facilitation	Ensure representative participation of women in capacity development and in processes of definition of needs
2.2.1 Networks of public/private value chain actors supporting value chain leverage of environmental sustainability.	Advise public and private actors on analyzing and taking into account the gender implications of the value chains to be included in the plans
	Advise on the inclusion of production systems and value chains with specific potential to benefit women in the public/private section plans
2.2.2 Value chains operating that contribute to ILM and GEBs	Advise producers and value chain actors on analyzing and taking into account the gender implications of the value chains
	Advise on the identification of value chain opportunities with specific potential to benefit women
2.2.3 Value chain sustainability standards applied, improved and validated in order to address ILM and location-specific GEB issues	Advise on the inclusion of gender considerations into value chain sustainability standards
2.2.4 Value chain information management and traceability systems	Design information management systems in such a way as to ensure the equitable access of women to value chain information
3.1.1 Management plans for key landscape zones of priority for biodiversity and ecosystem services	Advise on the incorporation of gender considerations into management plans, including: - The definition of safeguards to avoid or mitigate potential negative impacts of management measures and/or regulations on women?s interests (for example restrictions on women?s access to or use of resources) - The identification of management measures with specific potential to benefit women
3.1.2 Investments in restoration of priority areas in terms of BD and	Analyze the gender implications of restoration proposals (e.g. reductions in women?s access to or use of the areas to be restored)

Outputs	Project actions
ecosystem services	Actively promote the participation of women in the formulation and implementation of restoration proposals
3.1.3 Functioning incentive/PES mechanisms tailored to optimize flows of ecosystem services	Advise on the incorporation of considerations of gender equity into the distribution of benefits from incentive/PES schemes
	Facilitate the participation of women in the formulation and implementation/governance of incentive/PES schemes
4.1.1: Project monitoring and evaluation plan and system developed and implemented	Ensure that gender-specific/sensitive indicators are monitored, analyzed and used to inform the implementation of the project
4.1.2: System for adaptive results-based management of the project	Ensure that the monitoring of gender-specific/sensitive indicators informs measures to optimize gender outcomes from project activities
4.2.1: Knowledge management, learning and communication strategies are developed and implemented	Formulate KM, learning and communication strategies to ensure that they provide for the management and communication of knowledge on gender-specific issues
	Ensure that women or women?s organizations are included among the target audiences of communication activities
	Collect and disseminate gender lessons and good practices in promoting gender equality and women?s empowerment.
4.2.2: Mechanisms are developed and applied to coordinate the project with global, regional and transboundary efforts under the FOLUR IP	Include gender-related issues in knowledge interchanges with the FOLUR global knowledge to action platform (GKAP).
	Seek specific technical support from the global K2A platform, where needed, on the incorporation of gender issues and indicators in the project

Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?

Yes

Closing gender gaps in access to and control over natural resources; Yes

Improving women's participation and decision making Yes

Generating socio-economic benefits or services or women Yes

Does the project?s results framework or logical framework include gender-sensitive indicators?

Yes

4. Private sector engagement

Elaborate on the private sector's engagement in the project, if any.

1. The project will feature close partnerships with national, regional and global private sector actors. These partnerships will involve:

- Working jointly to provide support to the farmers and farmer organizations from which corporate partners source rice with GEF-funded support focusing in particular on strengthening knowledge and capacities among farmers (and extension agents) to meet sustainability standards;

- Advising on the choice and application of sustainability standards and value chain network models to help farmers and farmer organizations meet sustainable procurement criteria as well as possible measures to capture landscape-level dimensions, and fine-tune criteria and network

models to reflect local variations in conditions in order to maximize their relevance and effectiveness;

- Supporting sector-wide dialogue (involving multiple private and public stakeholders) on aspects such as collaborative landscape management, harmonization of sustainability standards, knowledge management and exchange, and consumer awareness.

2. These forms of collaboration will be vital in moving towards a tipping point situation where were the inclusion of sustainability considerations in rice value chains is the norm across the whole sector, and sustainability becomes a source of value for value chain actors. Relations with private sector actors will serve to address the findings of the rice value chain SWOT analysis reported in paragraph 0 and 0, in a vertically integrated way. Private sector actors such as Olam, Loc Troi and PAN (see below) have well-developed support systems serving their supplier farmers, which will complement Government extension programmes and provide entry points for strengthening the supply side of value chains (including capacities for compliance with environmental sustainability standards); private sector companies with well-developed consumer profiles and marketing capacities have the potential to address issues of market development and branding which currently affect the development of green value chains; and they have the capacity to support and oversee value-adding and compliance with food safety standards along the value chain.

3. The project will partner with, and be co-financed by, major private sector rice companies operating at national level and specifically in the project area itself. The companies which have committed to co-financing to date are Olam, Loc Troi and PAN, but opportunities for partnership with other companies will be explored during implementation. Olam, in particular, is a multi-national corporation trading in rice and other commodities throughout the region, and the relations developed with the company in the Mekong Delta will be linked to relations with the company in other FOLUR projects, with support from the GP at regional and global levels (see below).

4. As a child project of the FOLUR Impact Programme, the project will coordinate engagement with the private sector in close coordination with the Global Platform of the IP. The strategies and actions of the project to ensure this coordination or ?docking? with the GP are presented in Annex W, under GP Pillar B. These relate to the FOLUR priorities of engagement of private sector agents and organizations on policies, practices, and financing towards sustainability outcomes at global, regional and country level; participation in commodity roundtables to access private sector audiences; advancement of country policy reforms and incentives toward achieving sustainability and restoration commitments; targeted flagship reports on key issues for public and private sector engagement; and creation of innovation funds on key issue areas such as private sector and gender. The national, regional and global reach of companies such as Olam will also permit the exchange of lessons among projects and countries on collaborative famer support and other aspects of PSE, with support from the GP.

5. The project will also take advantage of regional and global organizations and platforms to facilitate engagement of private sector actors. It will be closely linked to the multi-stakeholder, public/private Sustainable Rice Platform, whose membership includes government agencies and research institutes, supply chain actors, civil society organizations and service, input and equipment providers[1]. In addition to providing a mechanism for interaction with private sector regarding sustainability issues in rice landscapes of the Mekong Delta and beyond, and for identifying and realizing opportunities for further partnerships during the life of the project, the project will support the application of the SRP Standard for Sustainable Rice Cultivation[2] as a benchmark for harmonizing approaches to sustainability across the private sector. The SRP Standard, which is the world?s first voluntary sustainability standard for rice, is an inclusive tool for practitioners in the public and private sectors to drive wide-scale adoption of climate-smart sustainable best practice. Together, the SRP Standard and Indicators offer an objective ?working definition? of sustainability that can serve as a normative basis for monitoring and evaluation, policy-making, as well as a benchmark for supply chain assurance schemes.

6. The project will form part of the Sustainable Rice Landscapes Initiative (SRLI) (see Box 20). WBCSD, one of the members of the SRP and the SRLI, will be an important link between project stakeholders and the private sector, alongside SRP. Of particular relevance to the project, the FOLUR IP and the private sector strategy of GEF-7 is work that WBCSD is leading in partnership with other SRLI partners on developing blended finance products based on the SRP standards. An action group has been established with SRLI and other partners to engage with finance providers and investigate links with the technical assistance program being developed under the project.

These blended finance initiatives aim to leverage debt, equity and carbon markets to open up new opportunities for farmer beneficiaries and communities to access financial resources needed in support of investments in sustainable production and management.

7. Additional opportunities to link the project to blended finance will be developed through engagement with UN Environment and the Dutch multinational banking and financial services company Rabobank, under the recently-launched global Forest Protection and Sustainable Agriculture partnership. This partnership aims to unlock at least USD 1 billion in finance towards deforestation-free, sustainable agriculture and land use. The AGRI-3 Fund[3] will catalyse private financial resources for this initiative: it aspires to function as a role model for banks, other financial institutions and agribusinesses by developing business models that include acceleration of forest protection and reforestation and implementation of innovative agricultural solutions, whilst improving the living standards of local farmers and smallholders.

8. The project will also further explore and realise opportunities for the engagement of private sector actors in the development and application of tools for information management, monitoring and traceability (see Output 4.2.2). Building from and through links with the project level information and knowledge management system (see Outcome 4), the project will work with producers and corporate actors in the value chain to define their needs for information management on value chain functioning and traceability and provide support to enable them to tailor the systems to their specific needs and to issues related to sustainability within the contexts of the target landscapes, and to generate the relevant information and input it into the information management systems. A number of commercial information management systems are available that can be adapted to meet these needs, such as CropIn (www.cropin.com) and the ?STICKY? Next Generation Rice app developed by Peterson PIL. The links between the project information and knowledge management system and these (and potentially other) private sector tools will be explored further during project implementation, in discussion with value chain actors and Government.

[1] http://www.sustainablerice.org/Get-Involved/#members-list

[2] http://www.sustainablerice.org/Resources/#srp-standard

[3] https://www.rabobank.com/en/images/AGRI3Fund_brochure.pdf

5. Risks to Achieving Project Objectives

Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):

Description of risk	Impact	Probability of occurence	Mitigation actions	Responsible party
Limited commitment in central and provincial Governments to sustainability and ILM in the Mekong Delta hinders the consolidation and institutionalization of policies and regulations on sustainable management (Outcome 1.1) and the introduction of ILM (Outcome 1.2)	High	Low	Outreach on the multiple socioeconomic, resilience and environmental benefits of sustainability and ILM Inclusion of sustainability criteria in systems for provincial government accountability to central Government	MONRE

Description of risk	Impact	Probability of occurence	Mitigation actions	Responsible party
Limited commitment of local stakeholders to participating in and sustaining dialogue hinders the introduction of ILM (Outcome 1.2)	High	Low	Social outreach to stakeholders on the objectives and benefits of dialogue	MONRE
Limitations in the effectiveness and/or continuity of partnerships for delivery of knowledge, and development and scaling out of farmer capacities (Outcome 2.1)	Medium	Low	Outreach on the mutual benefits of partnerships, in terms of scaling and sustainability Adaptive management approach, with ongoing review and adjustment to partnership opportunities	MONRE
Limitations in the effectiveness and/or continuity of partnerships for delivery and scaling out of restoration (Outcome 3.1)	Medium	Low		
Limitations in preference and/or willingness to pay for sustainable production in domestic and global markets (Outcome 2.2)	Medium	Medium	Avoidance of excessive reliance on market-based instruments as leverage for farmer behaviour and sustainability ? emphasis on on-farm benefits for productive sustainability and resilience, plus exploration of financial incentives. Collaboration with value chain actors on developing sustainability-based branding to stimulate consumer demand	IPSARD
Limitations in policy commitment to incentive/PES mechanisms hinder the availability of financing for restoration (Outcome 3.1)	Medium	Low	Outreach on the ?return on investment? achievable through incentives/PES schemes in terms of increased social, productive and environmental sustainabiliey and the economic value of ecosystem benefits.	MONRE
Limitations in community buy-in to restoration (Outcome 3.1)	Medium	Low	Promotion of incentive/PES schemes to generate financial benefits for community participation in restoration and follow-up maintenance	MONRE
Limitations in the effectiveness and/or continuity of partnerships for knowledge management hinder improvements to management and decision-making (Outcome 4.1)	Medium	Low	Budget flexibility to allow direct project investment in knowledge management where necessary, to reduce reliance on partnerships	MONRE
Limited receptiveness of resource managers and planners to information inputs hinders improvements to management and decision-making (Outcome 4.1)	Medium	Low	Outreach to resource managers and planners to raise awareness of the benefits of incorporating information inputs Development of capacities of resource managers and planners to incorporate and respond to information inputs	MONRE

Description of risk	Impact	Probability of occurence	Mitigation actions	Responsible party
Limited commitment to collaboration on information management hinders improvements to management and decision-making (Outcome 4.1)	Low	Low	Outreach and facilitation of collaboration on information management	MONRE
Limited receptiveness of farmers and other resource managers to applying monitoring results in support of adaptive management (Outcome 4.2)	Medium	Medium	Awareness raising among farmers and other resource managers and development of their capacities for applying monitoring results in support of adaptive management	MONRE
Receptiveness of actors in Vietnam and other FOLUR countries to coordination and knowledge exchange (Outcome 4.4)	Low	Low	Awareness raising on the benefits of coordination and knowledge exchange, and development of capacities	MONRE
Climate change (see Box 3):: - Increasing precipitation throughout the basin will lead to increased annual flows in the Mekong mainstream. Climate change will increase the size of the flood peak. - The variability of the Mekong flood pulse will increase. - Sea level rise and increasing average flood volumes will increase the depth and duration of average floods. - Sea level rise, increasing extreme flood volumes and escalating cyclone activity will increase the depth and duration of extreme floods. - The period of agricultural drought per year may significantly increase in large areas.	High	High	- Support the transition/reversion to flood-based production systems capable of functioning under conditions of increased flood frequency, depth and unpredictability, reducing reliance on increasingly ineffective flood control investments - Promote climate-resilient production and management options, within the context of diversified (and therefore resilient) farming and livelihood systems (see Box 6 and Box 7). - Support information flow on climate-related variables into planning and decision-making (Output 1.3).	Project executing agency, FAO and partners

Description of risk	Impact	Probability of occurence	Mitigation actions	Responsible party
COVID19 pandemic related impacts on the internal and international travel, operation of government/ partners/ project; health impacts on general population as well as economic impacts nationally and locally 1. Reduced financial (co-financing) support from Government, development partners, and private sector, due to limited overall funding availability resulting from the COVID-19-related economic downturn, and/or the reorientation of available funding to actions directly related to COVID-19 2. Government expenditure and prioritization of different programs and sectors, including agriculture, food security and natural resources might change. 3. Closure of offices, transport etc. will delay launch of project and its implementation. 4. Potential or partial disruption of food system supply chains, such as logistics 5. Increased losses and spoilage in high value commodities 6. Disruption of demand for products and markets, due to temporary closure of hotels and restaurants 7. Higher dependence on natural ecosystems, as people who lose employment and income from other sectors depend more on them for their livelihoods, thereby increasing pressures on them	High	High	1. If there are changes in cofinance, then partners to work closely to seek alternative options for co-financing and ensure continuity of resource allocation to ongoing initiatives in project target areas. 2. It is anticipated that the project scope will help to support the Government?s response to COVID-19 through its focus on food security and livelihoods diversification of vulnerable communities. However, project activities will be further discussed with the Government to ensure that emerging priorities and responses, as a result of the pandemic, are well reflected in the project?s target areas during implementation. 3. It is likely that periodic closures of transport and offices as well as restrictions on organizing meetings/ training with large number of people will impact project implementation. Therefore, the project will institute local mechanisms such as local facilitators / work with local partners to ensure that some work can continue on the ground. Detailed planning will be done with the government operational partners to mobilize their field offices and others and the project will ensure that all recommended safe practice are followed by the project team and by communities where the project is working. 4. Provide advice to farmers and government to meet immediate food needs 5. Conduct socio-economic impact assessment (as part of baseline assessment) to inform the project implementation 6. Ensure close collaboration with private sector entities and logistic companies to understand emerging barriers related to the pandemic and establish feasible options 7. Support producer organizations in linking with export markets and encourage use of online markets where possible 8. FAO is planning to undertake more detailed analysis on the impacts of COVID-19. Based on this findings, the project will prioritize work in more impacted areas of the project sites to strengthen community management and alternative livelihoods.	Project executing agency, FAO and partners

1. **COVID-19:** Since the first case of the COVID-19 was reported in Viet Nam on 23 January 2020, the Government of Viet Nam (GoV) accelerated efforts to contain the spread of the virus and provide treatment for those infected. To contain the outbreak, the government put in place regulations restricting the mobility of people, closing schools and non-essential service facilities as well as implementing over time, a regime of social and physical distancing.

2. The National COVID-19 Response Plan ? representing Government of Viet Nam?s multi-sectoral response to the crisis ? was first issued on 20 January, providing for a social protection package with cash support for those most vulnerable and workers who lost jobs, and impacted enterprises with low interest credit to pay workers? salaries. This was complemented by the UN COVID-19 Strategic Preparedness and Response Plan for Viet Nam), focused on five pillars: 1) ensuring essential health services are available and protecting health systems, 2) helping people cope with adversity through social protection and basic services, 3) protecting jobs, supporting small and medium-sized enterprises, and informal sector workers through economic response and recovery programmes, 4) guiding the surge in fiscal and financial stimulus to make macroeconomic policies work for the most vulnerable and strengthening multilateral and regional responses and 5) promoting social cohesion and investing in community-led resilience and response systems.

3. The principal implications of COVID-19 in Vietnam include: reduced health-seeking behaviour and access to essential health care; limited access to water, sanitation and weak hygiene practices; impacts on quality and inclusive education and learning; impacts on livelihood, food security and nutrition; internal and cross-border migration; limited access to social assistance and protection; pessure to provide care for children, pregnant women, the elderly and persons with disabilities; impacts on psycho-social wellbeing; and exposure to violence against women and children.

4. The specific potential implications for the project, in practical terms, are summarized in the risk table above, together with corresponding mitigation measures.

5. The models for sustainable production and management, proposed by the project, will contribute to the processes of ?building back better? by supporting robust, environmentally sustainable and diversified food value chains, based on reliable and adaptive relations between producers and retailers/consumers, that will be better able to cope with external ?shocks? such as those presented by crises such as COVID-19 than existing systems. Participatory Guarantee Schemes, for example, are based on producer/consumer relations typically at a local level, by-passing conventional value chains (see paragraph 175). The criteria for the selection of the production and management models to be supported by the project (Box 6) also include their feasibility, competitiveness and sustainability in agronomic, economic and social terms, taking into account for example considerations of availability of attractive, stable and robust markets, and of factors of production (including labour given the current trends of rural-urban migration and potential disruption to labour supply from crises such as COVID-19).

6. Institutional Arrangement and Coordination

Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

6.a Describe the institutional arrangement for project implementation.

1. The Ministry of Natural Resources and Environment (MoNRE) will be the **main government counterpart**. MoNRE will have the overall executing and technical responsibility for the project, with FAO providing technical oversight as GEF Agency. MoNRE will coordinate all efforts to implement the project?s components, aligning with other initiatives and assuring that all deadlines are achieved and that the project?s results are discussed throughout all national and local institutions involved.

2. The Food and Agriculture Organization (FAO) will be the **GEF Implementing Agency** for the Project, providing project cycle management services as established in the GEF Policy. FAO, as GEF Implementing Agency, holds overall accountability and responsibility to the GEF for delivery of the results. FAO will provide oversight of project implementation and technical support to ensure that the project is being carried out in accordance with agreed standards and requirements. Technical support

will be provided by FAO in coordination with government representatives participating in the Project Steering Committee.

3. FAO responsibilities, as GEF agency, will include:

? Administer funds from GEF in accordance with the rules and procedures of FAO;

? Oversee project implementation in accordance with the project document, work plans, budgets, agreements with co-financiers, Operational Partners Agreement(s)and other rules and procedures of FAO;

? Provide technical guidance to ensure that appropriate technical quality is applied to all activities concerned;

? Conduct at least one supervision mission per year; and

? Report to the GEF Secretariat and Evaluation Office, through the annual Project Implementation Review, on project progress and provide financial reports to the GEF Trustee.

4. MoNRE and the Institute of Policy and Strategy for Agriculture and Rural Development (IPSARD) will be the **Operational Partners (OP)** for the project based on the standard Operational Partners Agreement to be signed between FAO and MoNRE and IPSARD. The OPs will be responsible for the day-to-day management of project results entrusted to them in full compliance with all terms and conditions of the Operational Partners Agreements to be signed by the OP, and GEF relevant requirements.

5. As OPs of the project, MoNRE and IPSARD will be responsible and accountable to FAO for the timely and quality implementation of the agreed project results, operational oversight of implementation activities, timely reporting, and for effective use of GEF resources for intended purposes. The implementation of all agreed results and activities in full compliance with the OPA provisions and due diligence with regard to FAO Social and Environmental Quality Standards will be ensured by the OPs.

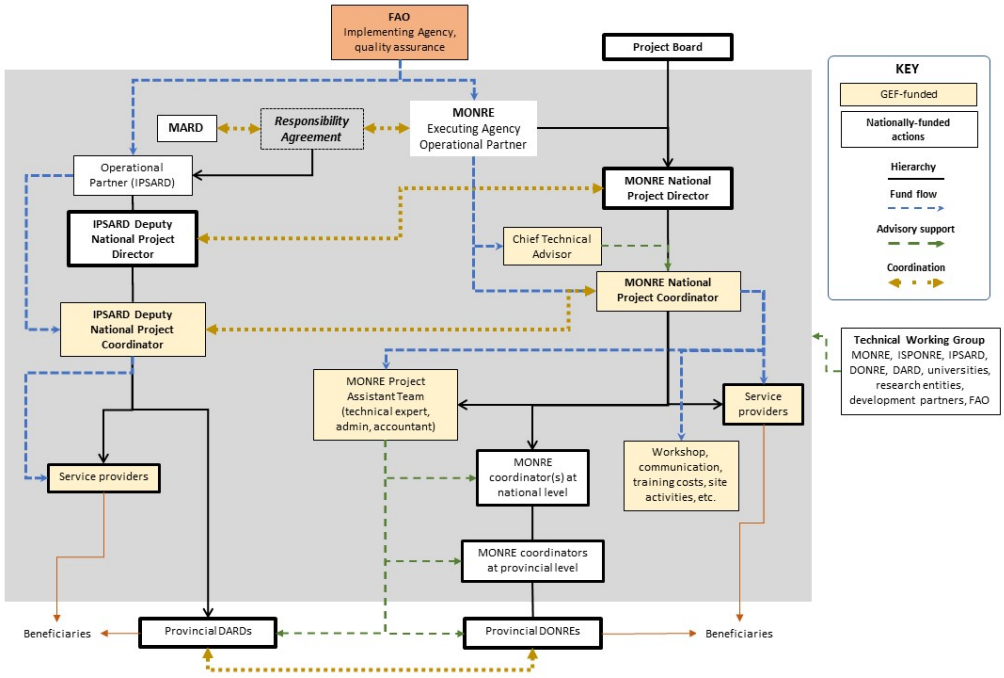
6. The OPs will bear full fiduciary and programmatic risk, and will be administratively and technically responsible to FAO for the implementation of the agreed results of the project, monitoring and financial management in accordance with the rules and procedures as established in the signed OPAs. Such responsibility extends over all funds disbursed by the OPs to any entity under contract with the Operational Partners.

7. The Operational Partners MoNRE and IPSARD will coordinate all efforts to implement the project?s components, aligning with other initiatives and assuring that all deadlines are achieved in a timely manner and that the project?s results are discussed with national and local institutions involved.

FAO will be involved in recruitment and procurement process by reviewing ToRs and technical specifications, and issuing no-objection letters.

8. FAO and the project partners will collaborate with the implementing agencies of other programs and projects to identify opportunities and facilitate synergies with other relevant GEF projects, as well as projects supported by other donors. This collaboration will include: (i) informal communications between GEF agencies and other partners in implementing programs and projects; and (ii) exchange of information and outreach materials between projects.

9. The project organization structure is as follows:



10. A **Project Steering Committee** (PSC) will be established and co-chaired by MONRE and FAO. It will also be comprised of representatives from MARD and the Provincial People?s Committees of the 5 target provinces of the project.

11. The National Project Coordinator (see below) will be the Secretary to the PSC. The PSC will meet at least two times per year to ensure:

i) Oversight and assurance of technical quality of outputs;
ii) Close linkages between the project and other ongoing projects and programmes relevant to the project;
iii) Timely availability and effectiveness of co-financing support;
iv) Sustainability of key project outcomes, including up-scaling and replication;
v) Effective coordination of government partner work under this project;
vi) Approval of the six-monthly Project Progress and Financial Reports, the Annual Work Plan and Budget;
vii) Consensus-based management decisions when guidance is required by the National Project Coordinator of the PMU.

12. The members of the PSC will each assure the role of a **National Focal Point** for the project in their respective agencies. As Focal Points in their agency, the concerned PSC members will:

i) technically oversee activities in their sector,
ii) ensure a fluid two-way exchange of information and knowledge between their agency and the project,
iii) facilitate coordination and links between the project activities and the work plan of their agency, and
iv) iv) facilitate the provision of co-financing to the project.

13. The government will designate a **National Project Director** (NPD) through MONRE, and a **Deputy Project Director** through IPSARD responsible for overseeing Component 2. The NPD and Deputy NPD will have the responsibility of supervising and guiding the National Project Coordinator (see below) on the government policies and priorities. They will also be jointly responsible for coordinating the activities with all the national bodies related to the different project components, as well as with the project partners. They will be responsible for requesting FAO the timely disbursement of GEF resources that will allow the execution of project activities, in strict accordance with the Project Results-Based Budget and the approved AWP/B for the current project year.

14. A **Project Management Unit** (PMU) will be co-funded by the GEF and established within MoNRE. The main functions of the PMU, following the guidelines of the Project Steering Committee,

are to ensure overall efficient management, coordination, implementation and monitoring of the project through the effective implementation of the annual work plans and budgets (AWP/Bs). The PMU will be composed of a National Project Coordinator (NPC) who will work full-time for the project lifetime. In addition, the PMU will include a Knowledge Management and M&E Specialist; a PMU Finance Manager; an Administrative and logistical assistant; and a National technical expert on integrated landscape and natural resource management.

15. The **National Project Coordinator** (NPC) will be in charge of daily implementation, management, administration and technical supervision of the project, on behalf of the Operational partner and within the framework delineated by the PSC. S/he will be responsible, among others, for:

i) Coordination with relevant initiatives;
ii) Ensuring a high level of collaboration among participating institutions and organizations at the national and local levels;
iii) Ensuring compliance with all OPA provisions during the implementation, including on timely reporting and financial management;
iv) Coordination and close monitoring of the implementation of project activities;
v) Tracking the project?s progress and ensuring timely delivery of inputs and outputs;
vi) Monitoring, providing technical support and assessing the outputs of the project national consultants and other service providers hired/contracted with GEF funds, as well as the products generated in the implementation of the project, including products and activities carried out by project consultants;
vii) Approval and management of requests for provision of financial resources by FAO using FAO provided format in OPA annexes;
viii) Monitoring of financial resources and accounting to ensure accuracy and reliability of financial reports;
ix) Ensuring timely preparation and submission of requests for funds, financial and progress reports to FAO as per OPA reporting requirements;
x) Maintaining documentation and evidence that describes the proper and prudent use project resources as per OPA provisions, including making available this supporting documentation to FAO and designated auditors when requested;
xi) Implementing and managing the project?s monitoring and communications plans;
xii) Organizing annual project workshops and meetings to monitor progress and preparing the Annual Budget and Work Plan;
xiii) Submitting the six-monthly Project Progress Reports (PPRs) with the AWP/B to the PSC and FAO;
xiv) Preparing the first draft of the Project Implementation Review (PIR);
xv) Supporting the organization of the mid-term and final evaluations in close coordination with the FAO Budget Holder and the FAO Independent Office of Evaluation (OED);
xvi) Submitting the OP six-monthly technical and financial reports to FAO and facilitate the information exchange between the OP and FAO, if needed;
xvii) Informing the PSC and FAO of any delays and difficulties as they arise during the implementation to ensure timely corrective measure and support.

16. FAO will support the National Project Coordinator, as needed, including through annual supervision missions.

17. A **Deputy Project Coordinator (DPC)**, fully funded by GEF, will be responsible at provincial level for supporting the NPC in the implementation of his/her responsibilities. coordinate all activities at provincial level on behalf of Central PMU, overseen and reporting to the NPC.

18. The responsibilities of the DPC will include the following:

i) Coordination and close monitoring of the implementation of project activities at provincial level;

ii) Tracking the project?s progress at provincial level, and ensuring timely delivery of inputs and outputs;

iii) Monitoring, providing technical support and assessing the outputs of the national consultants and other service providers operating at provincial level;

iv) Supporting the implementation and management of the project?s monitoring and communications plans;

v) Convening and chairing meetings of the Provincial Working Group.

19. At provincial level, a **Provincial Working Group** (PWG) will be established covering all five of the target provinces. Coordinated, convened and chaired by the DPC, the PWG will include representatives of the Provincial People?s Committees, DARDs and DONREs of each province, as well as representatives of other stakeholder organizations including the Vietnam Farmers? Union and Vietnam Women?s Union, academic/research organizations and other actors at the discretion of the Provincial Project Coordinator (including other civil society organizations and cooperation agencies). The PWG will serve to:

i) Discuss and orient project implementation at local level;
ii) Advise and review the work plans developed by DARDs and DONREs, prior to their submission to the PSC;
iii) Support coordination, alignment and synergies between the project and other initiatives at provincial level;
iv) Promote buy-in and sustained mainstreaming of project approaches by the participating actors;
v) Promote linkages between project actions at provincial and central levels (to this end, PPC representatives will be represented on both PWG and PSC).

20. The 5 DONRE and 5 DARD members participating in the PWG will assume the roles of **Provincial Focal Points** for the project. Their responsibilities will be to:

i) Ensure that the plans and priorities of the DONRE and DARD (as relevant) are effectively and regularly communicated to the DPC, and to the PWG during its meetings;
ii) Communicate the discussions and results of PWG meetings, and interim communications from the DPC, to their respective institutions, and ensure that they are reflected in their institutions? work plans;
iii) Support the mainstreaming of the results, lessons learned and approaches of the project in the plans and procedures of their intitutions, in such a way as to maximize durability, relevance and scale of the uptake of project impacts.

21. FAO assurance role will be provided by FAO Vietnam and technical support provided by FAO Regional Office for Asia and the Pacific in Bangkok.

22. Financial management of GEF resources will be carried out according to FAO rules and procedures.

23. Financial management of resources entrusted to the Operational Partners will be carried out in line with the OPs? rules and regulations, as assessed by the Capacity Assessment and in strict compliance with all OPA provisions and other FAO and GEF requirements.

6.b Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

24. The project forms part of the FOLUR Impact Programme and as such its actions will be coordinated and harmonized as necessary with other child projects in the IP, with the support of the FOLUR Global Knowledge to Action (K2A) Platform. Particular attention will be paid to coordination with other projects in the region that are focused on rice landscapes, including the FOLUR projects in Indonesia, Malaysia, Thailand, India and China, and the LDCF project in Cambodia (all of which were under formulation at the time of submission of this project). All of these projects form part of the Sustainable Rice Landscapes Initiative (SRLI) of the multi-stakeholder, public/private Sustainable Rice Platform, which will constitute the principal mechanism for coordination among them.

25. There will also be close coordination and partnership between the project and investments by other agencies in the Mekong Delta, including the following:

- The GIZ Better Rice Initiative Asia (BRIA) II/Market-oriented Smallholder Value Chains Project (MSVC)
- The GIZ Green Innovation Centres
- The World Bank Integrated Climate Resilience and Sustainable Livelihoods (ICRSL) project, and its associated GEF-funded project 9265[1]
- The World Bank GCF Flood-Based Agriculture Project, currently under development.

26. Partnerships with these projects will allow the GEF project to support the mainstreaming of ILM approaches and GEBs into their operations, and for them thereby to function as leverage for the scaling-up of impacts and management/production models that contribute to sustainability.

[1] https://www.thegef.org/project/gef-af-mekong-delta-integrated-climate-resilience-and-sustainable-livelihoods-project

7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assesments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

7. Consistency with National Priorities.

1) National Action Plan for Adaptation (NAPA) under LDCF/UNFCCC

27. Under the United Nations Framework for Climate Change (UNFCC), Vietnam is developing its national adaptation plan (NAP). The document is being reviewed by line ministries and will be approved by Prime Minister in 2020. In Vietnam the National Strategy for Climate Change (Decision 2139/QD-TTg signed by PM on 5th December 2011) is an overarching framework to responding to climate change in Vietnam.) with the common goal "*Promoting the capacity of the entire country, simultaneously implement solutions to adapt to the impacts of climate change and mitigate greenhouse gas emissions, ensure the safety of people's lives and property, aiming at sustainable development. Strengthening capacity of human and natural systems to adapt to climate change, developing a low-carbon economy to protect and improve the quality of life, security and national sustainable development in the context of global climate change and actively protect the earth's climate system with the international community*?.

28. The strategy sets out 4 specific objectives: (i) Ensuring food security, energy security, water security, poverty reduction, gender equality, social security, public health, improving living standards and protecting natural resources in the context of climate change; (ii) Low carbon economy, green growth becomes a mainstream trend in sustainable development; mitigating greenhouse gas emissions and increasing the ability to absorb greenhouse gases gradually become mandatory indicators in socio-economic development; (iii) Raise awareness, responsibilities and capacity to respond to climate change of stakeholders; developing science and technology potentials, quality of human resources; perfecting institutions, policies, developing and effectively using financial resources to enhance the competitiveness of the economy and Vietnam's position; take advantage of opportunities from climate change for socio-economic development; develop and replicate lifestyle, climate-friendly consumption patterns; (iv) Contribute positively to the international community in responding to climate change; strengthen Vietnam's international cooperation activities to effectively respond to climate change.

29. It is clear that the FOLUR project is in-line with the objective of the national strategy for climate change, particularly the project will contribute to the specific objective (i) Ensuring food security, energy security, water security, poverty reduction, gender equality, social security, public health, improving living standards and protecting natural resources in the context of climate change, and objective (iv) Contribute positively to the international community in responding to climate change; strengthen Vietnam's international cooperation activities to effectively respond to climate change.

2) National Action Program (NAP) under UNCCD

30. After signing the United Nations Convention to Combat Desertification (UNCCD), in 2002 the Government of Vietnam (GoV) has developed and approved its National Action Program (NAP) for 2002-2020. NAP implementation has been divided into three time periods from 2002-2020 (Phase 1: 2002-2005 Phase 2: 2006-2010 Phase 3: 2011-2020).

31. The objective of NAP during the period 2011-2020 is to achieve sustainable development, all activities will be oriented to strengthen efficiency of management and utilization of natural resources to meet the demand of social development at new higher level, the management and science and technological capacity will have synchronous process and much more developed than in the previous phase in all sectors and at all levels.

32. Priorities will be given to achieve:

(a) a sustainable forestry exploitation based on establishing a balance between forest resources use and an ecologically-safe forest coverage,

(b) a sustainable land use at all levels of landholders or landowners on the principle of upholding the biological productivity of the land with all its ecological and socioeconomic value for the present and the future generations,

(c) a proper reclamation/rehabilitation of degraded land to mitigate its negative effects and give back its original values as a fundamental property for human existence,

(d) a significant improvement in water resources management to ensure quality water supply for various purposes under different circumstances, especially in drought-affected areas,

(e) strengthened and up-date management capacity and technical facility for monitoring and evaluation for early warning system to forecast in-time flood and drought, and

(f) a significant improvement in rural livelihood, no poverty, hunger and illiteracy.

33. UNCCD?s National Action Plan of Vietnam is to combat desertification in Vietnam also highlighted the requirement for Mekong Delta region. Long Xuyen tetragon (in Mekong Delta) is located in the areas often affected by flood in rainy season and forest fire in dry season. In recent years, flood occurs very frequently, the water level in watershed areas of Tan Chau and Chau Doc station usually reach to the third alarm level, create a big loss (estimated hundreds billions VND every year) for local people. Due to the high concentrated mangrove forests place, forest fires often happen underground that are very difficult to foresee. This area is also affected seriously by unsustainable shrimp production. As other areas affected by land degradation, Long Xuyen tetragon has high rate of the poor households therefore the solutions should be integrated with poverty reduction and livelihood development as follows:

- ? Build channel system to intake fresh water for purging acidity and washing alum to protect arable land for rice production
- ? Plant Melaleuca forests in combination of reforestation and protect existing mangrove forests in the area.
- ? Promote of planting alum-resistant crop species such as ananas, sugar cane, casava, etc. Set up agro-forestry-fishery production models to improve livelihood of local people.
- ? Develop appropriate planning for fishery-forestry production to develop new income generation sources as well as to protect ecological systems.
- ? Strengthen forest fire forecasting and preventing systems

34. The FOLUR project will support the implementation of NAP for UNCCD, particularly in Mekong Delta region by improving ecosystem services, particularly mangrove forests and better water management.

3) National Biodiversity Strategies and Action Plan (NBSAP) under UNCBD

35. Under the United Nations Convention on Biodiversity Diversity Conservation (UNCBD), in 2013 Vietnam developed the national strategy for biodiversity conservation to 2020 with a vision to 2030 (Decision No. 1250/Q?-TTg on 31 July 2013 of Prime Minister). The strategy has a number of viewpoints include:

(a) Biodiversity is a fundamental element of the green economy; biodiversity conservation is one of the key measures to adapt to and mitigate the impacts of climate change;

(b) Conservation and sustainable use of biodiversity contributes to poverty reduction and improved living conditions of the citizenry;

(c) Biodiversity conservation shall be the responsibility of the whole society, of State authorities, agencies, and every organization and individual;

(d) Socialization and international cooperation are enhanced to promote conservation and sustainable development of biodiversity;

(e) Biodiversity conservation must be integrated into national, sectoral and provincial development strategies, plans and policies

36. The strategy has a vision to 2030 ?*25% of degraded ecosystems of national and international significance will be restored. Biodiversity shall be conserved and used sustainably, bringing major benefits to the citizenry and contributing significantly to the country?s socio-economic development*?. The overall objective to 2020 is ?naturally important ecosystems, endangered, rare, and precious species, and genetic resources are preserved and used sustainably, contribute to the development of the green economy, and actively respond to climate change?. In order to achieve the overall objective, three specific targets were proposed:

1. To improve the quality and increase the area of protected ecosystems, ensuring that the area of terrestrial protected areas accounts for 9% of the total territorial area, marine protected areas account for 0.24% of the sea area, forest coverage reaches 45%, primary forest remains at 0.57 million hectares, coupled with effective protection plans; that mangrove forests, seagrass beds, and coral reefs are maintained at the current levels; that *15% of degraded critical ecosystems are restored*; and the number of internationally recognized protected areas are increased to *10 Ramsar wetlands*, 10 biosphere reserves, and 10 ASEAN heritage parks.
2. To improve the quality and populations of endangered, rare and precious species, ensuring that no new case of species extinction is reported, and significantly improve the status of endangered, rare and threatened species.
3. To compile an inventory, to store, and to conserve native, endangered, rare and precious genetic resources (including animals, plants and microorganisms) to ensure that they are not impaired or eroded.

37. To achieve above set-out target, 6 measures or area of interventions were proposed including

1. Change in behavior and awareness of state management organizations and communities towards biodiversity conservation and sustainable use
2. Improve the legislative and institutional system and strengthen the capacity of law enforcement for the implementation of legal acts on biodiversity
3. Strengthen integration of biodiversity conservation in policy development
4. Promote scientific research, development and the application of modern technology in conservation and sustainable use of biodiversity
5. Increase financial resources for biodiversity conservation
6. Promote integration and international cooperation in conservation and sustainable use of biodiversity

38. The FOLUR project will support the implementation of NAP for biodiversity conservation under UNBCD in Vietnam, particularly in Mekong Delta region by improving ecosystem services, particularly mangrove forest and better water management.

4) National Communications (NC) under UNFCCC

39. Under the United Nations Framework for Climate Change (UNFCC), Vietnam has developed and submitted 3 national communications (NC) to UNFCC in 2003 (initial national communication), in

2010 (second NC), the third NC in 2018. In the most recent national communications to UNFCC (Third NC), Viet Nam has identified a number of gaps/needs in responding to climate change that need to address in the up-coming years. For example, development of criteria for monitoring and evaluation of climate change adaptation actions for all levels, sectors and guidelines; and adopting technologies on (i) Real-time forecasting, early warning, sharing of real-time monitoring information systems for meteorology and hydrology sectors; (ii) Impact assessment, vulnerability, exposure to hazards and adaptation measures; (iii) Sustainable use of water resources, prevention of water pollution, urban water supply and drainage; (iv) Erosion control and coastal and river bank protection; and (v) Sustainable agricultural, forestry and fishery production, biotechnology to create new varieties that are resilient to climate change.

40. The FOLUR project in Mekong Delta region will contribute to sustainable agriculture, forestry and fishery production.

5) National Capacity Self-Assessment (NCSA) under UNCBD, UNFCCC, UNCCD

41. Three Rio-conventions including UNCBD, UNFCCC and UNCCD which Vietnam has been signed and recently received a grant from GEF to assess the capacity and achievement of the implementation of three conventions. Vietnam has achieved most of targets but still encounter difficulties particularly in biodiversity conservation and land degradation aspects. The FOLUR project which focus on conservation and restoration of ecosystems, include land use is very in line with the priorities of Vietnam, particularly in Mekong Delta region.

6) Poverty Reduction Strategy Paper (PRSP)

42. PRSP was first developed in 2003, since then no information on PRSP was released. The government of Vietnam (GoV) has approved its national target program (NTP) on poverty reduction for 2016-2020 (Decision No. 1722/QDD-TTg signed on 2nd Sept 2016 by PM) which the aim of implementing poverty reduction targets sustainability, limit the poverty trap (or turn to poverty); contributing to achieve economic development, social security, improve livelihood and income of citizen, particularly in most vulnerable areas. The poor farmers also will receive support and training in farming practices and other extension services.

7) Biennial Update Report (BUR) under UNFCCC

43. In 2017, Government of Vietnam submitted The Second Biennial Updated Report of Viet Nam to the UNFCCC, which referred to a number of policies related to climate change developed in recent years, including:

(1) Law on Environmental Protection No. 55/2014/QH13 - Chapter IV;

(2) Law on Meteorology and Hydrology No. 90/2015/QH13 that highlights climate change monitoring; climate change impact assessment; evaluation of adaptation and mitigation measures; national climate assessment; periodical development and publication of climate change scenarios; integration of climate change monitoring into socio-economic development strategies and plans;

(3) Resolution No. 08/NQ-CP dated January 23rd, 2014 by the Government issued the Government?s action program to implement Resolution No. 24-NQ/TW dated June 3rd, 2013 of the Central Committee of the Party on active response to climate change, strengthening natural resources management and environmental protection;

(4) Decision No. 403/QD-TTg dated March 20th, 2014 of the Prime Minister approving the National Green Growth Action Plan for the period of 2014-2020, which covers Local Institutional Development and Green Growth Planning; Greenhouse Gas Emission Reduction and Promotion of the Use of Clean Energy and Renewable Energy; Green Production; Green Living and Sustainable Consumption.

(5) Decision No. 2068/QD-TTg dated November 25th, 2015 of the Prime Minister approved Viet Nam?s Renewable Energy Development Strategy up to 2030 with a vision to 2050.

(6) Decision No. 2359/QD-TTg dated December 22nd, 2015 of the Prime Minister approved the National Greenhouse Gas (GHG) Inventory System. The main objectives of the system include to ?make biennial GHG inventories and develop national climate change reports and to submit them

to the UNFCCC? and ?contribute to the achievement of low carbon economy, green growth and GHG reduction targets in the Nationally Determined Contribution (NDC) of Viet Nam?.

(7) Resolution No. 93/NQ-CP dated October 31st, 2016 of the Government approved Paris Agreement (PA) to implement the UNFCCC.

(8) Decision No. 2053/QD-TTg dated October 28th, 2016 of the Prime Minister approved the Paris Agreement Implementation Plan of Viet Nam.

(9) Decision No. 622/QD-TTg dated May 10th, 2017 of Prime Minister issued the National Action Plan to implement the 2030 Agenda for Sustainable Development, of which goal No. 13 is to take timely and efficient actions to respond to climate change and natural disasters.

44. BUR of Vietnam (2017) also highlight needs for finance, technology and capacity-building for responding to climate change. In the agriculture sector, BUR2 lists of number of technologies including development of biogas use, reuse of straw as an organic fertilizer, wet and dry irrigation systems and improved rice cultivation system, biochar, integrated crop management for rice production (ICM), replacement of urea with SA fertilizer (Sulfate amon - (NH4)2SO4), reuse of by-products of crop residues annually, improved feed rations, improving the quality and services of breeds, feeds and materials for aquaculture, improving technology in aquaculture and waste treatment, improving irrigation technology for coffee production, and improvement of processing and processing technology of agro-forestry-fishery processing. A number of these technologies will be promoted by the FOLUR project.

45. Special capacity-building activities for the private sector, businesses and communities will be the focus of the Paris Agreement Implementation Plan.

8) National Legislation, Governance and provisions for Environmental and Social Management

46. Environmental protection law 2014, Land Law 2013, Biodiversity Law 2008 and Law on Water Resources 2012, are key legislative instruments that the project will follow.

47. The Environmental Protection Law 2014 states in Article 5, paragraph 3 aims to: ?Conserve the biological diversity; extract and use natural resources in a proper and economical manner; develop green and renewable energy; strengthen recycling, reuse and reduce waste substances to a minimum? and paragraph 9 mentions ?Combine environmental and natural resource protection activities with the response to climate change and environmental security assurance?. The project will therefore support and be in line with the regulations of the Law, particularly related to land protection and restoration.

48. In particular, Government decree no.40/2019/N?-CP on strategic environmental assessment (SEA) and environmental impact assessment (EIA) highlights the requirements for environmental and social considerations during the development of investment project proposal. The FOLUR project has component 3 on conservation and restoration of ecosystems. Based on the scale and type of interventions, the sub-project may need to follow EIA (which include social aspects) regulation before construction of hard infrastructure.

9) Contribution to Land Degradation Neutrality (LDN) Targets

1. The project will contribute to the following LDN targets:

- **1.2.1: Save water used for irrigation by new technologies and initiatives (including agroforestry technology):** Improvement of productive practices over 1,650,000 ha (core indicator 3) will include reduced cropping intensity and increases in flood-based agricullture, resulting in decreased demand for irrigation water and improved recharge.

- **2.2.3 Natural forest restoration:** the project will result in the restoration of 1,000 ha of natural forest (plus 200 ha of reforestation) (core indicator 3.2).

10) Contribution to Aichi Biodiversity Targets

1. The contributions of the project to Aichi Biodiversity Targets are set out in Table 12

Table 1. Project contributions to Aichi Biodiversity Targets

Aichi Goals and Targets	Project Contributions
Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	

Aichi Goals and Targets	Project Contributions
Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	As Output 1.3.2, the project will establish a programme for training and awareness raising of provincial government actors on ILM and its application in planning and decision-making
Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	Under Output 1.2.2, environmental sustainability criteria with ILM perspectives (including BD) will be included in systems for provincial government accountability to central Government
Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio-economic conditions.	As Output 3.1.3, the project will support incentive/PES mechanisms tailored to optimize flows of ecosystem services (including BD)
Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	As Output 2.2.1, the project will support retworks of public/private value chain actors supporting value chain leverage of environmental sustainability
Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use	
Target 7: By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	Through the project, 549,500 ha will be under improved manaagement to benefit biodiversity (core indicator 4.1)
Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	The project will result in reduced levels of pesticide and nutrient application to production systems
Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	
Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	Restoration activities may include mangrove restoration. Improved management practices in the broader landscape (including water flow management and reduced chemical inputs) will result in improved conditions for BD in Tram Chim National Park, and the project will promote connectivity between Tram Chim, the Mekong mainstream, and other wetlands.
Target 12: By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	The improvement of conditions in Tram Chim NP, through improved management of the broader landscape, will benefit the globally threatened Sarus Crane.
Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services	
Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	As a result of the project (Outcome 3.1), 151,200 ha of landscapes will be restored, with a priority focus on areas that generate ecosystem services

Aichi Goals and Targets	Project Contributions
Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	Improved management and restoration in production landscapes and ecosystems will result in a CCM benefit of 12,889,969 tCO_2eq.

8. Knowledge Management

Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.

1. Knowledge sharing and learning is a key component to achieving the expected transformative impact of the project in Vietnam. The actions of the project in relation to knowledge management are set out under Outputs 4.2.1 and 4.2.2, which have a budget of US$ 187,712. A detailed Knowledge Management and Communication Plan will be developed at project start, by the project?s dedicated Knowledge Management Officer

2. The project will engage robustly with the FOLUR Global Platform (GP) to share lessons learned outward and bring lessons, investment and good practice to Vietnam. This engagement will be a two way street with the GP enabling catalytic engagement by the child projects to benefit from global level dialogue and action. Lessons learned across this portfolio of programmes will strengthen global-level IP outcomes on leveraging global coalitions to pursue FOLUR objectives and outcomes and promoting public and private investments in ILM, deforestation-free commodities influenced by FOLUR, in FOLUR countries and globally.

3. The specific strategies and actions that the project will undertake to coordinate with the GP, on facilitating effective KM at project and programme levels, are shown in Annex W, in relation to Pillar C of the GP on Strategic Knowledge Management and Communications.

4. There will be regular information flow between this project and the GEF International Waters (IW) project on ?Enhancing sustainability of the Transboundary Cambodia - Mekong River Delta Aquifer?. The FOLUR project, which will start around one year before the IW project, will generate important lessons on options for the management of production systems and ecosystems, with hydrological implications, which may inform the selection, design and implementation of pilots by the IW project. The pilots of the IW project may also inform the strategies of FOLUR project particularly in relation to groundwater management and water-related NBS options. There will also be data exchange between the two projects: the data, analyses and assessments collected and managed under Component 1 of the FOLUR project (through for example NCA, TSA and SEA) may serve to inform the Transboundary Diagnostic Analysis (TDA) supported by the IW project, and vice versa.

5. The Rice Commodity PPP Task Force established in 2017 will be used to convene leaders and public and private stakeholders of other key agricultural players and provinces to exchange knowledge and lessons learned and inspire others. The private sector will be an important catalyst for scaling and technology transfer within Vietnam. In addition, by demonstrating to the provincial/national government and to other counties/provinces how to achieve more sustainable outcomes, and by ensuring that knowledge from the project are transferred into the provincial/national government?s action plans, such as provincial land use plans, it will be possible to ensure wider scale-up nationwide of the innovations to be implemented under the project.

6. Through the national and provincial levels, the project will support the Vietnam Farmers Union to convene multi-stakeholders including the private sector, academia, national agriculture banks and insurance companies to support sustainable rice landscapes management and strong gender integration. As a result, small-scale producers will be effectively connected or engaged in agri- commercial value chains in equitable partnerships with women recognized as central economic actors.

7. Regionally, Vietnam plays an active role as a party to the Mekong River Commission (MRC), which aims to improve the utilization, conservation and management of water and related resources in the Mekong region. Globally, Vietnam is involved in ?4 per 1000? Initiative and Sustainable Rice Platform (SRP).

8. The Asia Pacific Regional Climate Change Initiative hosted by FAO integrates a regional rice work programme focused on improving the sustainability of rice production and resource use efficiency, and ultimately improving food and nutrition security, based on conservation and sustainable management of goods and services from rice ecosystems and landscapes. The work under the Initiative has proven to be successful among the rice producing countries in the region and will be used to share the knowledge across the region.

9. The Sustainable Rice Platform (SRP) is a multi-stakeholder platform established in December 2011 to promote resource efficiency and sustainability in trade flows, production and consumption operations, and supply chains in the global rice sector. In Vietnam private and public entities (incl. IPSARD and Loc Troi Corporation) have joined to promote sustainable rice cultivation. It is expected that the Vietnam project will contribute to and benefit from knowledge dissemination through the SRP network, and regional coordination. The SRP plays an important role in integrating research with private sector opportunities, and the technical knowledge, innovations and best management practices emerging from the project along with others in SRP partnership will of key value. For instance, the project?s experience in promoting PGSs and SRP Standard adoption will be documented and used to inform future PGS and SRP activities not only in Vietnam, but in Cambodia, Thailand and potentially elsewhere in the region.

10. Through measures to link smallholder producers and value chain actors to the sustainability standards developed under the SRP, the project will also engage a consortium of private sector commodity buyers and traders, NGOs, international development organizations and governments working to promote more sustainable rice products. This same approach will be integrated into other FOLUR commodity projects incorporating SRP standard in China, Indonesia and Thailand as well as countries outside of the FOLUR.

11. A priority approach will be to build on existing platforms at the global level as well. A key platform for food systems is the One Planet network (10YFP) Sustainable Food Systems (SFS) Programme, an important global multi-stakeholder partnership recognized by SDG 12, Target 12.1. The One Planet is the only truly multi-stakeholder (government, UN, civil society, private sector (national - global)) network. Its goal is to accelerate the shift towards more sustainable food systems[1].

The KM budget, key deliverables and timeline are shown below.

Knowledge Management Plan

Key Deliverables	**Responsible Parties**	**Timeframe**	**GEF Budget (USD)**
Develop Knowledge Management and Communication Plan (Output 4.2.1)* * Note: Key deliverables and timeline will be further refined in this plan.	Project Management Unit (PMU)	First six months of the project	Knowledge Management and M&E Specialist (USD 81,000 included in M&E budget, thus not included here to avoid double-counting)
Translation/ Interpretation service to support KM	PMU	Years 1-5	14,212
Review and collation of results and lessons learned by partners and review of academic literature	PMU	Years 4-5	27,000
Participation in Global meetings of FOLUR partners and CPs	PMU	Years 1-5	30,000
Participation in Regional commodity platform gatherings / discussions with private and public sector representatives	PMU	Years 2-5	30,000
Travel for PMU members to project sites in support of KM	PMU	Years 1-5	7,500

Key Deliverables	Responsible Parties	Timeframe	GEF Budget (USD)
Participation / contribution to training workshops, regional communities of practice (sharing knowledge, successes)	PMU	Years 2-5	24,000
Workshops for participatory knowledge exchanges and collation of lessons learned	PMU	Years 3-4	10,000
Inception and final workshop	PMU	Years 1 and 4	30,000
Design and printing of project lessons learnt documents	PMU	Years 3-5	15,000
Total Budget (Outputs 4.2.1 and 4.2.2)			**187,712**

[1] http://www.oneplanetnetwork.org/sustainable-food-system/about

9. Monitoring and Evaluation

Describe the budgeted M and E plan

1. The project will address monitoring and evaluation (M&E) at a number of levels:

1. ***Internal results-based adaptive management:*** the project?s results framework (see Annex A1) sets out SMART indicators at outcome and output level. These will be monitored in accordance with the M&E plan in

2. ***GEF-7 Core Indicators*** (see Annex F), which are linked to and reconciled with selected indicators in the results framework, will be used for reporting global environmental benefits to GEF at project mid-term and end, in support of programmatic monitoring and adaptive management across the GEF portfolio.

3. ***Sustainable Development Goals:*** monitoring of progress in relation to SDGs will support overall programmatic monitoring and adaptive management by the Government of Vietnam, FAO and GEF (see Table 11).

4. ***LDN indicators:*** monitoring of progress in relation to LDN indicators will also support overall programmatic monitoring and adaptive management by the Government of Vietnam, FAO and GEF.

5. ***FOLUR Impact Programme:*** progress in relation to GEF-7 Core Indicators, LDN targets and SDGs will be reported to the FOLUR Global Knowledge to Action Project (GKAP) in order to permit programmatic monitoring and adaptive management of the IP. In addition, results framework indicators 31 and 32 (Output 4.4) will measure the level of insertion of the project to the FOLUR IP as a whole, and as such will support the monitoring of the effectivness of the GKAP in relation to IP-wide coordination and knowledge support to participating projects, and its corresponding adaptive management.

Table 13. Monitoring Plan

Indicator	Frequency
GEF-7 core indicators	
3.1 Area of degraded agricultural land restored (Hectares) - *RF indicators 15 and 17*	- Measured yearly as RF indicators 15 and 17 - Reported at project mid-term and end, as GEF-7 Core Indicator

Indicator	Frequency
3.2 Area of forest and forest land restored - *SDG 15.3.1 Proportion of land that is degraded over total land area)* - *LDN indicator 1 (land cover change)* - *RF indicators 15 and 17*	- Measured yearly as RF indicators 15 and 17 - Reported at project mid-term and end, as GEF-7 Core Indicator
3.4 Area of wetlands (including estuaries, mangroves) restored - *RF indicators 15 and 17*	- Measured yearly as RF indicators 15 and 17 - Reported at project mid-term and end, as GEF-7 Core Indicator
4.1 Area of landscapes under improved management to benefit biodiversity - *SDG 2.4.1 Proportion of agricultural area under productive and sustainable agriculture*	- Measured yearly as RF indicators 15 and 17 - Reported at project mid-term and end, as GEF-7 Core Indicator
4.2 Area of landscapes that meet national or international third-party certification that incorporates biodiversity considerations	- Measured and reported at project mid-term and end, as GEF-7 Core Indicator
4.3 Area of landscapes under sustainable land management in production systems - *RF indicator 15*	- Measured yearly as RF indicators 15 and 17 - Reported at project mid-term and end, as GEF-7 Core Indicator
6.1 Carbon sequestered or emissions avoided in the AFOLU sector - *LDN indicator 3: carbon stocks*.	- Measured and reported at project mid-term and end, as GEF-7 Core Indicator
11. Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment - *Includes (but not limited to) RF indicators 9, 11 and 13*	- Measured yearly as RF indicators 15 and 17 - Reported at project mid-term and end, as GEF-7 Core Indicator
Results framework (RF) indicators for internal project results-based adaptive management	
1. Number of provincial Governments with specific commitments for continuing inter-provincial coordination in budgetary provisions, administrative procedures, regulations and/or organizational structures	- Measured and reported yearly in PIRs
2. Percentage of actors in Central Government aware of the benefits of integrated approaches	- Measured and reported yearly in PIRs
3. Number of provincial Governments that include sustainability criteria with ILM perspectives in their reporting to central Government (with relation to application of e.g. Nature Based Solutions, agroecology and/or SRP standard)	- Measured and reported yearly in PIRs
4. Percentage of people in different stakeholder categories (Government, farmer organisations, community representatives) considering that landscape management issues prioritised by them are being satisfactorily addressed	Measured and reported in PIRs and mid-term and end.
5. Numbers of multi-stakeholder socially-inclusive platforms functioning, and meeting at least annually, with participants including representatives of: - Provincial Governments (DONRE and DARD) - Private sector (e.g. trades associations) - Farmers? organizations - Women?s organizations - Indigenous peoples	Measured and reported yearly in PIRs
6. Numbers of provincial Governments that have applied SEA in the formulation and application of their Provincial Master Plans, taking into account sustainability considerations, GEBs, landscape dynamics and results of multi-stakeholder dialogue	Measured and reported yearly in PIRs

Indicator	Frequency
7. Number of provincial Governments managing and applying information on parameters related to environmental sustainability in planning and decision-making processes	Measured and reported in PIRs and mid-term and end.
8. Increased knowledge and awareness among provincial Governments and other relevant stakeholders regarding ILM approaches and their application in planning and decision-making	Measured at mid-term and end
9. Number of natural capital accounting and targeted scenario analyses carried out	Measured and reported in PIRs and mid-term and end.
10. Number of provincial Government staff trained on ILM and its application in planning and decision-making	Measured and reported yearly in PIRs
11. Number of farms where sustainability standards (e.g. SRP, Organic) are monitored and applied to guide adaptive management	Measured and reported in PIRs and mid-term and end.
12. Number of provincial Governments monitoring and applying sustainability standards and indicators (e.g. NBS, TAPE) to guide adaptive management at landscape level	Measured and reported in PIRs and mid-term and end.
13. Number of sustainability standards applied	Measured and reported in PIRs and mid-term and end.
14. Numbers of GHG monitoring tools established	Measured and reported yearly in PIRs
15. Numbers of farmers (by area, ethnic group and sex) able to access the technical and financial support they need to adopt agricultural practices and natural resource management that contributes to ILM and GEBs	Measured and reported in PIRs and mid-term and end.
16. Number of public and private extension services, and cooperative-based/cooperation groups promoting management practices that specifically favour GEBs and ILM	Measured and reported yearly in PIRs
17. Number of farmer-based organizations with strengthened capacities to obtain and manage productive inputs	Measured and reported yearly in PIRs
18. Number of cooperatives and agribusinesses with improved access to financing (e.g. WBCSD, Agri-3 Fund, DFCD) for sustainable production	Measured and reported yearly in PIRs
19. Numbers of farmers (by sex and ethnic group) who are applying practices that contribute to ILM and GEBs as a result of their insertion into value chains that favour these	Measured and reported in PIRs and mid-term and end.
20. Number of rice sector actors (weighted by scale of operations) committed to applying sustainability standards across their operations	Measured and reported in PIRs and mid-term and end
21. Number of action plans developed	Measured and reported yearly in PIRs
22. Numbers of farmers participating in value chains that contribute to ILM and GEBs	Measured and reported in PIRs and mid-term and end.
23. Number of standards applied, improved and validated	
24. Numbers of value chains with effective information management and traceability systems in place	
25. Area proposed for restoration, with management planning instruments in place together with provisions for governance and financial sustainability	Measured and reported in PIRs and mid-term and end.
26. Number of management plans, by area covered	Measured and reported yearly in PIRs
27. Number of restoration initiatives under implementation, by area	Measured and reported yearly in PIRs
28. Number of incentive/PES schemes implemented, by area covered and amount of resources channelled	Measured and reported yearly in PIRs

Indicator	Frequency
29. Percentage of targets set out in annual work plans and budgets that are based on the results of M&E	Measured and reported yearly in PIRs
30. Percentage of indicators measured in accordance with M&E plan	Measured and reported yearly in PIRs
31. Number of key decision-making and planning processes that are informed by M&E results	Measured and reported yearly in PIRs
32. Frequency with which knowledge is exchanged and efforts coordinated at national and global actors within the framework of the FOLUR global platform and/or regional hubs	Measured and reported yearly in PIRs
33. Frequency of updating and communication of knowledge resources	Measured and reported yearly in PIRs
34. Percentage of the global, regional and transboundary issues identified by the FOLUR global platform and/or regional hubs as being of relevance to the project on which the project is coordinating efforts with other countries	Measured and reported yearly in PIRs

Table 14. Snapshot of the possible data sources and interfaces to be used in the M&E system

Components	1. Enabling environment	2. Sustainable food production and value chains	3. Ecosystem conservation and restoration	4. Knowledge Management and M&E
Data Source (actors)	- Government organizations - Institutions	- Communities - Farmers - Value-chain actors	- Institutes - Governments - Communities	- Project Implementation teams - Project actors
Key Data	- Policy documents - Regulations and guidelines	- Household, farm level data (inputs, production, land holding) - Extension access - Value chain access	- GHG emissions - Land restored - Land conserved - Biodiversity conserved	- Information systems - Platforms - Knowledge dissemination systems
Key Interface	- Web-based interface	- Mobile-based interface	- Mobile, web and secondary data harvest	- Data harvester (from different systems and platforms)

2. The M&E system of the project will also be coordinated with that of the FOLUR IP as a whole, and supported by the FOLUR Global Platform (GP). The GP will support the project by providing harmonized technical guidance and oversight on M&E (including the application of indicators and the management, reporting and use of results) to all IAs/CPs, and by aggregating relevant indicators (especially GEF-7 core indicators and LDN indicators). The project will in turn support programmatic M&E by reporting to the GP in a timely and consistent manner on the values of GEF-7 core indicators and LDN indicators, as well as other indicators of programmatic relevance (especially indicators 32 snf 34 in Table 13.

Table 15. Monitoring and Evaluation Budget

Budget item	Budget category	Cost (USD)
National Knowledge Management and M&E Specialist	National consultants	81,000
Development of Result-based Management system (RBM)	Contracts	48,000
Independent Mid-Term Review		50,000
Independent Terminal Evaluation		80,000

Travel for PMU members to project sites for implementation and technical supervision	Travel	7,500
Technical advisory support and training on the formulation and implementation of the M&E plan, including methodologies for indicator measurement, management of the monitoring results, and their integration with programmatic M&E across the FOLUR IP	Training	16,000
Provision of technical advisory support and training to MONRE on the application of monitoring results in results-based management (RBM)		10,000
Annual PSC meetings and review workshop		40,000
Quarterly project management unit meeting (national and provincial)		9,000
	Total	**341,500**

10. Benefits

Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

1. The project concept is predicated on the integration of environmental and social sustainability into the management of production systems and landscapes in the Mekong Delta, in accordance with the provisions of Government *Resolution 120/NQ-CP on Sustainable and Climate-Resilient Development* in the Mekong Delta of Viet Nam, which sets out the vision of the region by 2100 becoming:

?*A sustainable, safe and prosperous Mekong Delta, based on suitable development of high-quality agriculture products, combined with services, ecotourism and industries, focusing on manufacturing industry, enhancing the competitiveness of agriculture products; Infrastructure network is coordinately planned, developed, modern in an active, smart way and adapting to climate change; ensuring safety under disaster; reasonable use of natural resources; biodiversity and cultural tradition is conserved and enhanced; human lives and spirit are improved*?.

2. Specifically, the project will support the Government of Vietnam in achieving its goal of diversification of production systems in the Mekong Delta in an environmentally and socially sustainable manner.

3. Annex X presents evidence that the option of transition from the current situation (which is recognised by the Government as being unsustainable) to a flood-tolerant water management approach offers superior economic returns to the Business as Usual scenario, once social and environmental externalities are taken into account.

4. Under the project model, the delivery of improved global environmental benefits (in terms of biodiversity, climate change mitigation and sustainable land management) will be inextricably accompanied by social benefits including the following:

- Improved resilience to the effects of climate change, given that the current environmentally unsustainable options will also otherwise also become unsustainable in productive and social terms due to the effects of climate change in terms of land subsidence, sea level rise, and modified rainfall regimes. The project will be co-financed by initiatives focused specifically on climate change adaptation given that the management systems that are foreseen have the potential to deliver both GEB and adaptation benefits;
- Improved resilience to the volatility in economic and food systems at regional and global levels: the kinds of diversified production systems that are required to optimize GEBs also typically contribute to the resilience of farm families? food security and livelihoods;
- Improved nutritional quality: diversification away from rice will permit farmers to broaden and improve their nutrition through increase access to alternative, more nutritional crops such as vegetables (many of those grown in flood-based systems, such as morning glory, are highly nutritive) and in-field fauna such as duck, fish and crustaceans.

- Improved compliance by farmers with environmental sustainability criteria, such as those set out in the SRP Standard, have the potential to allow them improved access to favourable markets for their rice and other products.

Decent Rural Employment

1. The project will contribute to FAO Organizational Outcome 2 (Under FAO Strategic Objective 3 "Reduce rural poverty") that ?The rural poor have greater opportunities to access decent farm and non-farm employment." by:

- Supporting the Government in achieving a transition from high-input to diversified low-input production systems in the Mekong Delta: in addition to delivering improved GEBs, this will contribute to reducing farmers? exposure to harmful agricultural chemicals in the workplace;
- Where feasible and appropriate (subject to the results of participatory processes of situation analysis and technology formulation/validation in Farmer Field Schools), supporting the introduction of alternatives for sustainable mechanization in accordance with principles of appropriate technology, in order to reduce drudgery in agricultural work;
- Supporting the diversification of farming and livelihood systems: in addition to delivering improved GEBs, this will increase the diversity and the resilience of the employment opportunities open to farmers (women and men);
- Assisting farmers in achieving compliance with the SRP Standard, which combines the delivery of environmental benefits and increase opportunities for income with compliance with standards on decent working conditions;
- Overall, the contribution by the project to the sustainability and resilience of production systems in the Mekong Delta will contribute to sustaining the rural economy (including opportunities for decent rural employment) in the face of the current trends of rural-urban migration,

11. Environmental and Social Safeguard (ESS) Risks

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

Overall Project/Program Risk Classification*

PIF	CEO Endorsement/Approval	MTR	TE
	Medium/Moderate		

Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

ANNEX H2: ENVIRONMENTAL & SOCIAL RISK MANAGEMENT PLAN

Risk identified at PIF stage	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action
3.2.1 Would this project involve the importing or transfer of seeds and/or planting materials for cultivation Seed procurement is envisioned under the project.	Moderate	The project will use local seed supply systems ? particularly those developed in VAAS. In all cases of seed procurement appropriate technical clearances will be sought. Any imported varieties used by the project would be based upon recommendations from the technical team implementing the project to enhance farmer resilience. Should this situation arise appropriate technical clearances will be sought.	Types of seed used in FFS and extension systems supported by the project: to be verified by extension agents and through procurement documents.	To be determined through monitoring during project life

Risk identified at PIF stage	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action
4.7 Would this project be located in or near an internationally recognized conservation area e.g. Ramsar or World Heritage Site, or other nationally important habitat, e.g. national park or high nature value farmland? Yes. The Tr?m Chim National Park is located in the proposed project area. Tr?m Chim National Park is a national park in the reed fields ??ng Th?p M??i, Tam N?ng District, ??ng Th?p Province of Vietnam. This national park was created to protect several rare birds, especially the sarus crane (Grus antigone), a species listed in the IUCN Red List.	Moderate	As detailed in Annex N of the ProDoc, the project will support the establishment and operation of a water monitoring and decision-support system linking the landscapes in which the Park is located with the Park itself. This will help ensure that water infrastructure outside of the Park is subject to participatory, evidence-based and adaptive management that optimizes conditions within the Park ? in turn helping Park managers to strike an adequate balance between the maintenance of favourable habitat conditions for globally important wildlife and the management of fire risk. The project will not directly carry out any actions within the boundaries of the Park itself apart from support to water monitoring.	Levels of responsiveness of water management actions in the production landscape with the results of the water monitoring and decision-support system.	To be determined through monitoring during project life

Risk identified at PIF stage	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action
5.1 Would this project procure, supply and/or result in the use of pesticides on crops, livestock, aquaculture or forestry? Pesticides may be procured as part of the project activities ? but this is considered unlikely. This will need to be verified during the full project design stage.	Moderate	On the basis of PPG studies, it is considered possible, but unlikely, that project activities will include the procurement of pesticides. This would only occur, if at all, in the context of small-scale demonstrations within the framework of farmer field schools: by definition, farmer field schools are demand-driven and based on participatory analyses of needs by farmers, so at this stage it is not possible to discount the possibility that in some cases these analyses will result in the identification of needs for limited pesticide use. In any case, the primary emphasis of extension support will be on agroecological alternatives and nature-based solutions, so it is expected that any demand will be small-scale in comparison with these non-pesticide alternatives. As noted in the Project Information Form, the Sustainable Rice Platform (SRP) Standards will form the basis of the project extension options for rice production systems. The SRP standards (specifically no. 18) incorporate IPM principles and a range of possible alternatives to pesticide use including but not limited to: Weed Management ? Good land preparation ? Use of certified seeds ? Crop rotation ? Flooding Insect and Disease Management ? Balanced nutrient application ? Promotion of natural enemies ? Synchronized planting ? Resistant/tolerant varieties ? Crop rotation ? Soil management Mollusc Management ? Water management ? Promotion of	Types of agricultural inputs used in FFS and extension systems supported by the project: to be verified by extension agents and through procurement documents.	To be determined through monitoring during project life

Risk identified at PIF stage	Risk Classification	Mitigation Action (s)	Indicator / Mean(s) of Verification	Progress on mitigation action
5.2 Would this project provide seeds or other materials treated with pesticides (in the field and/or in storage)? Treated seeds may be procured as part of the project activities, depending on the results of participatory needs analyses.	Moderate	In general, the project will be delivered at the field level through farmer field schools based on FAO IPM principles. Where procurement of treated seeds is required internal clearance procedures will be followed according to the guidance provided under ESS5 in the FAO ESM Guidelines.	Types of seed used in FFS and extension systems supported by the project: to be verified by extension agents and through procurement documents.	To be determined through monitoring during project life
7.6 Will this project directly employ workers? Yes.	Moderate	UN/FAO standards will be followed in employment practices used by the project.	Levels of compliance with UN/FAO standards. Verified through employment contracts and periodic review of working conditions and grievances.	To be determined through monitoring during project life
7.7 Would this project involve sub-contracting?		The project will implement some activity thorough Govt. agencies by letter of agreement. FAO procedures will be followed.	Levels of compliance of sub-contracting with FAO procedures. Review of sub-contracts and procedures by FAO VN.	To be determined through monitoring during project life

Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
Annex M ethnic minorities	**CEO Endorsement ESS**	
Annex H environmental and social risks	**CEO Endorsement ESS**	

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Annex A. 1: Project Results Framework

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Objective: To support the transformation of rice-dominated landscapes in the Mekong Delta towards sustainable, adaptive and resilient models of production and landscape management that deliver multiple environmental and social benefits. Global environmental benefits (Core Indicator targets): - Area of landscapes under improved management to benefit biodiversity (Core Indicator 4.1): 549,500 ha - Area of landscapes that meet national or international third-party certification that incorporates biodiversity considerations (Core Indicator 4.2): 1,500 ha - Area of landscapes under sustainable land management in production systems (Core Indicator 4.3): 1,099,000 ha - Area of forest, agricultural land and wetlands restored: 151,200 ha (composed of 120,000 under Core Indicator 3.1, 1,200 ha under Core Indicator 3.2, and 30,000 ha under Core Indicator 3.4) - Greenhouse gas emissions mitigated (Core Indicator 6.1): 12,889,969 tCO2eq - Number of direct beneficiaries disaggregated by gender (Core Indicator 11): 30,000 (50% women)							
Component 1: Enabling environment for integrated landscape management (ILM)							
Outcome 1.1 Strengthened planning, governance and regulatory frameworks for integrated landscape management	1. Percentage of people (by sex) in different stakeholder categories (Government, farmer organisations, community representatives) considering that landscape management issues prioritised by them are being satisfactorily addressed	To be confirmed at project start	20% of men and women in each category	60% of men and women in each category	Knowledge, attitudes and practice (KAP) surveys	Continued commitment by provincial Governments to ILM Commitment of local stakeholders to participating in and sustaining dialogue	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 1.1.1 Multi-stakeholder socially-inclusive platform established for dialogue on governance and planning responses to landscape-wide issues in relation to the implementation of Resolution 120	2. Numbers of multi-stakeholder socially-inclusive platforms functioning, and meeting at least annually, with participants including representatives of: - Provincial Governments (DONRE and DARD) - Private sector (e.g. trades associations) - Farmers? organizations - Women?s organizations - Indigenous peoples	0	1 platform covering all 5 provinces	1 platform covering all 5 provinces	Review of minutes of platform meetings	Receptiveness of stakeholders to participation in platform/dialogue	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 1.1.2 Provincial Master Plans formulated and applied based on Strategic Environmental Assessments (SEA) that take into account sustainability considerations, GEBs, landscape dynamics and results of multi-stakeholder dialogue	3. Numbers of provincial Governments that have applied SEA in the formulation and application of their Provincial Master Plans, taking into account sustainability considerations, GEBs, landscape dynamics and results of multi-stakeholder dialogue	0	2	5	Review of land use plans	-	Project M&E specialist
Outcome 1.2 Policy and regulatory commitments to sustainable management of the Mekong Delta are consolidated, coordinated and institutionalized	4. Number of provincial Governments with specific commitments for continuing inter-provincial coordination in administrative procedures, regulations and/or organizational structures	0	0	5	Review of budgets, administrative procedural manuals and regulations of provincial Governments	Continued commitment in central and provincial Governments to sustainability and ILM in the Mekong Delta	Project M&E specialist
Output 1.2.1 Evidence-based guidance for policy-makers in Central Government to raise awareness regarding the national/sector benefits of integrated approaches	5. Percentage of actors in central Government aware of the benefits of integrated approaches	**MONRE**: to be confirmed at project start	30%	60%	Knowledge, attitudes and practice (KAP) surveys	Receptiveness of actors in central Government	Project M&E specialist
		MARD: to be confirmed at project start	30%	60%			

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 1.2.2 Sustainability criteria included in systems for provincial government accountability to central Government	6. Number of provincial Governments that include sustainability criteria with ILM perspectives in their reporting to central Government (with relation to application of e.g. Nature Based Solutions, agroecology and/or SRP standard)	0 (reporting requirements already include some sector-specific sustainability issues)	0	5	Review of provincial Government reports to central Government	Receptiveness of actors in central and provincial Governments	Project M&E specialist
Outcome 1.3: Management and decision-making in Mekong Delta landscapes is optimised by effective information management and awareness raising	7. Percentage of MDR provincial Governments managing and applying information on parameters related to environmental sustainability in planning and decision-making processes	0	100%	100%	Review of provincial Government capacities	Effectiveness and continuity of partnerships for knowledge management Receptiveness of resource managers and planners to information inputs Commitment to collaboration on information management	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	8. Increased knowledge and awareness among provincial Governments across the MDR, and other relevant stakeholders regarding ILM approaches and their application in planning and decision-making	TBD	30% of those surveyed meet KAP standard on ILM	60% of those surveyed meet KAP standard on ILM	KAP surveys among stakeholders (methodology and standard to be defined at project start)		Project M&E specialist
Output 1.3.1 Objective information resources regarding the implications of alternative management scenarios national/sector benefits of integrated approaches	9. Number of natural capital accounting and targeted scenario analyses carried out	0	1 NCA and 1 TSA	2 NCA and 2 TSA	Review of reports on NCA and TSA analyses	-	Project M&E specialist
Output 1.3.2 Programme for training and awareness raising of provincial government actors on ILM and its application in planning and decision-making	10. Number of provincial Government staff trained on ILM and its application in planning and decision-making	TBD	40% of provincial Government staff (DONRE and DARD)	80% of provincial Government staff (DONRE and DARD)	Records of training	-	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 1.4: Monitoring of sustainability standards and indicators supports adaptive management at farm and landscape levels, and compliance with regulatory requirements and market-based standards	11. Number of provincial Governments monitoring and applying sustainability standards and indicators (e.g. NBS, TAPE) to guide adaptive management at landscape level	0 ha	2	5	Interviews and focus groups with farmers, provincial Governments and private sector actors	Receptiveness of provincial Governments to applying monitoring results in support of adaptive management	Project M&E specialist
	12. Number of farms where sustainability standards (e.g. SRP, Organic) are monitored and applied to guide adaptive management (corresponds to Core Indicator 4.2)	0	500	1,500		Receptiveness of farmers to applying monitoring results in support of adaptive management	Project M&E specialist
Output 1.4.1 Multi-level framework for adaptive management established, based on enhanced and locally-relevant indicators of sustainability	13. Numbers of multi-level frameworks established, linking landscape, community and farm levels and covering NBS, agroecology and productive sustainability considerations	0	1	1 multi-level framework established	Interviews and focus groups with farmers (women and men), provincial Governments and private sector actors	Buy-in by farmers and provincial Governments to the applications standards	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 1.4.2: Monitoring frameworks for agricultural GHG mitigation including indicators and MRV tools	14. Numbers of GHG monitoring tools established	0	0	1	Review of GHG monitoring tools	-	Project M&E specialist
Component 2: Promotion of sustainable food production practices & responsible commodity value chains that contribute to ILM and GEBs							
Outcome 2.1: Producers (women and men) have reliable access to technical and financial support and productive resources to adopt agricultural practices and natural resource management that contributes to ILM and secures GEBs	15. Numbers of farmers (by area, ethnic group and sex) able to access the technical and financial support they need to adopt agricultural practices and natural resource management that contributes to ILM and GEBs	To be confirmed at project start	5,000 (of whom at least 10% are ethnic minorities and 30% are women)	15,000 (of whom at least 10% are ethnic minorities and 30% are women)	- Information on coverage from extension agencies - Information from farmer cooperatives on their members? access to services - Interviews and focus groups with farmers on the coverage, quality and utility of services	Effectiveness and continuity of partnerships for delivery of knowledge, and development and scaling out of farmer capacities	Project M&E specialist
Output 2.1.1 Strengthened mechanisms for extension supporting GEBs and ILM	16. Number of public and private extension services, and cooperative-based/cooperation groups promoting management practices that specifically favour GEBs and ILM	0	1 DARD extension service, 1 private sector extension services and 2 cooperative-based/cooperation groups covering 4,000 farmers	5 DARD extension services, 3 private sector extension services and 10 cooperative-based/cooperation groups covering 30,000 farmers (corresponds to Core Indicator 11)	Review of extension materials, interviews with farmers, focus groups	Commitment of public and private sector actors to incorporating GEB and ILM considerations in extension programmes	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 2.1.2. Farmer-based organizations with capacities to obtain and manage productive inputs needed to produce sustainably	17. Number of farmer-based organizations with strengthened capacities to obtain and manage productive inputs	N/A	4	10	Capacity analyses of farmer organizations (metrics to be defined at project start)		Project M&E specialist
Output 2.1.3 Financing services available to farmers as a result of project facilitation	18. Number of cooperatives and agribusinesses with improved access to financing (e.g. WBCSD, Agri-3 Fund, DFCD) for sustainable production			3	Surveys of farmer organizations	Financing sources materialize as expected	Project M&E specialist
Outcome 2.2 Value chains provide incentives and standards for managing rice landscapes and production systems in accordance with environmental sustainability and GEBs	19. Numbers of farmers (by sex and ethnic group) who are applying practices that contribute to ILM and GEBs as a result of their insertion into value chains that favour these	0	200 (of whom at least 10% are ethnic minorities and 30% are women)	1,500 (of whom at least 10% are ethnic minorities and 30% are women)	Farmer surveys, DONRE/DARD data, focus groups	Preference and willingness to pay for sustainable production in domestic and global markets	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
	20. Number of rice sector actors (weighted by scale of operations) committed to applying sustainability standards across their operations	Olam, Loc Troi, PAN and SunRice (account for around 10% of rice traded in the MDR)	Companies accounting for a total of 15% of rice traded in the MDR	Companies accounting for a total of 20% of rice traded in the MDR	Co-financing commitment letters, business plans, websites, other written evidence	Continued market demand and corporate motivation for sustainable production	Project M&E specialist
Output 2.2.1 Networks of public/private value chain actors supporting value chain leverage of environmental sustainability	21. Number of action plans developed	0	1	3	Review of action plans	Buy-in by private sector Willingness of private sector actors to work together.	Project M&E specialist
Output 2.2.2 Value chains are established/operating that provide incentives and support to farmers to manage rice landscapes and production systems in accordance with environmental sustainability and GEBs	22. Numbers of farmers (by sex and ethnic group) participating in value chains that contribute to ILM and GEBs	0	500 (10% ethnic minorities and 30% women)	3,000 (10% ethnic minorities and 30% women)	Farmer surveys, DONRE/DARD data, focus groups	Social and economic attractiveness to farmers of ?green value chains? compared to alternatives	Project M&E specialist
Output 2.2.3 Value chain sustainability standards applied, improved and validated in order to address ILM and location-specific GEB issues	23. Number of standards applied, improved and validated	0	1	3	Farmer surveys, DONRE/DARD data, focus groups	Social and economic attractiveness to farmers of applying sustainability standards	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 2.2.4 Value chain information management and traceability systems established	24. Numbers of value chains with effective information management and traceability systems in place	0	2	4	Review of information management and traceability systems	Commitment of private sector actors and farmers to applying traceability standards	Project M&E specialist
Component 3. Conservation, management and restoration in forests, wetlands and farming systems to favour ecosystem services							
Outcome 3.1 Conservation, management and restoration practices in forests, wetlands and farming systems contribute to the generation of ecosystem services and are sustainably and equitably financed.	25. Area proposed for restoration, with management planning instruments in place together with provisions for governance and financial sustainability (corresponds to Core Indicator 3 target)	0 ha	30,000 ha	151,200 ha	Reports of entities carrying out planning, management and restoration, and field validation	Effectiveness and continuity of partnerships for delivery and scaling out of restoration Policy commitment to incentive/PES mechanisms Community buy-in to restoration	Project M&E specialist
Output 3.1.1 Management plans for key landscape zones of priority for biodiversity and ecosystem services	26. Number of management plans, by area covered (corresponds to part of Core Indicators 3.2 and 3.4)	0	0	2 management plans covering 15,000 ha (area to be confirmed with provincial governments)	Review of management plans	Commitment of provincial and district Governments to managing areas for biodiversity and ecosystem services	Project M&E specialist
Output 3.1.2 Investments in restoration of priority areas in terms of BD and ecosystem services	27. Number of restoration initiatives under implementation, by area	0	0	2 initiatives, (area to be confirmed with provincial governments)	Review of work plans and progress reports of entities carrying out restoration	Buy-in by local communities and provincial/district Governments	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Output 3.1.3 Functioning incentive/PES mechanisms tailored to optimize flows of ecosystem services	28. Number of incentive/PES schemes implemented, by area covered and amount of resources channelled	0	1 scheme under development (area to be determined during project implementation)	1 scheme under implementation (area to be determined during project implementation)	Review of regulatory instruments establishing schemes, and progres reports	-	Project M&E specialist
Component 4. Knowledge Management and M&E							
<u>Outcome 4.1:</u> Project implementation is based on RBM and responds effectively and adaptively to the results of monitoring	29. Percentage of targets set out in annual work plans and budgets that are based on the results of M&E	N/A	100%	100%	Review of annual work plans and budgets	-	Project M&E specialist
Output 4.1.1: Project monitoring and evaluation plan and system developed and implemented	30. Percentage of indicators measured in accordance with M&E plan	N/A	100%	100%	Review of M&E reports	-	Project M&E specialist
Output 4.1.2: System for adaptive results-based management of the project	31. Number of key decision-making and planning processes that are informed by M&E results	N/A	100% of project board meetings and annual work planning processes	100% of project board meetings and annual work planning processes	Review of minutes of board meetings and annual work planning processes	-	Project M&E specialist

Results chain	Indicators	Baseline	Mid-term target	Final target	Means of verification	Assumptions	Responsible for data collection
Outcome 4.2: Coordination and knowledge exchange at national and global levels enable the project to contribute effectively to programmatic efforts to further sustainability in food systems and landscape management	32. Frequency with which knowledge is exchanged and efforts coordinated at national and global actors within the framework of the FOLUR global platform and/or regional hubs	N/A	Knowledge is exchanged and coordination reviewed at least every 3 months	Knowledge is exchanged and coordination reviewed at least every 3 months	Review of communications with FOLUR global platform and regional hubs	Receptiveness of actors in Vietnam and other FOLUR countries to coordination and knowledge exchange	Project M&E specialist
Output 4.2.1: Knowledge management, learning and communication strategies are developed and implemented	33. Frequency of updating and communication of knowledge resources	N/A	Lessons learned and knowledge generated or acquired reviewed on a monthly basis	Lessons learned and knowledge generated or acquired reviewed on a monthly basis	Review of strategy documents		Project M&E specialist
Output 4.2.2: Mechanisms are developed and applied to coordinate the project with global, regional and transboundary efforts under the FOLUR IP	34. Percentage of the global, regional and transboundary issues identified by the FOLUR global platform and/or regional hubs as being of relevance to the project on which the project is coordinating efforts with other countries	N/A	50%	100%	Review of work plans and implementation reports		Project M&E specialist

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).

Responses to GEFSec Review of PIF, 23 April 2019

GEF Sec review	Agency response (25 April 2019)	Agency response at submission for CEO Endorsement
From the project description it appears that the investment will be utilized to support improved management 20% of the Mekong Delta across 5 large provinces. A clearer identification of the specific landscapes, why they were each selected and what they contribute to project cohesiveness and consistency with the project approach would be clarifying.	The Mekong Delta is comprised of 13 provinces. The selected 5 provinces represent a recognizable, contiguous landscape composed of five identifiable sub-ecosystems (as listed below). The site selection methodology utilized a ?Source-to-Sea? approach, and resulted in the identification of the five core provinces, from Source (Dong Thap & An Giang), crossing the buffer of Vinh Long, down to coastal area and Sea (Tra Vinh & Soc Trang). The five representative provinces and their sub-ecosystems include: ? Plain of Reeds: Dong Thap province. ? Long Xuyen Quadrilateral: An Giang province. ? Tien ? Hau Rivers Bank: Vinh Long province. ? Ca Mau peninsular: Soc Trang province. ? Coastal Belt: Tra Vinh province. The selection of these 5/13 Mekong provinces is also, importantly, underscored by GEB and production values (as outlined in PIF), and; the important fact that private sector engagement potentials are highest within these provinces.	The selection of the five target provinces has been validated with national and provincial actors during PPG, and the criteria for their selection remain valid. Additional data on the threats and global environmental values in these provinces, supporting their selection, are presented in PART II Section 1a (1) of the Project Document.

GEF Sec review	Agency response (25 April 2019)	Agency response at submission for CEO Endorsement
In the baseline section, please provide more detail on the private sector engagement by SRP in the landscapes and how this will be leveraged. Also, where missing, please provide a short description of the 8 international cooperation projects listed, including the resources that they contribute to baseline.	Additional information on core baseline projects involving private companies is outlined within the revised PIF (please refer to Project Overview and Approach, *Sections ?B? and ?C?*). These projects provide important baseline and efforts supporting the project?s scaling up of SRP standards and practices in target areas. Please find additional short description of relevant cooperation projects in the revised PIF, *Section B.*	Please see PART II Section 4 for further details on private sector engagement and its leverage. Please see PART II Section 1a (2) for further detail of the international cooperation projects that make up the baseline.
On regional engagement, cooperation on best practices and generation of KM products should be extended to the projects in Thailand and China, as all three projects involve the FAO and the SRP.	Duly noted. Please refer to section on Global and Regional Engagement of the revised PIF. National-regional and global SRP linkage and coordination will be further explored and is anticipated to be further discussed with GEF Sec and the World Bank (global FOLUR lead) within the PPG phase.	Please see PART II Section 8 regarding knowledge management. At present, SRLI countries in partnership with FAO and the GEF under the FOLUR IP include: China, Indonesia, Thailand, Vietnam and India, and; via LDCF, Myanmar and Cambodia.
Result framework: Target contribution to GEF-7 Indicators should be reformulated to demonstrate the results of activities are generating value for money. In particular:		
The GHG estimate of 2,000,000 t CO2e mitigated seems low given the GEF investment and co-financing	PIF had been the updated with the revised core indicator 6.	The revised GHG estimate is 12,889,969 t CO_2eq

GEF Sec review	Agency response (25 April 2019)	Agency response at submission for CEO Endorsement
The investment mobilized as indicated in the co-financing table isn?t identified from a clear source and unacceptably low, particularly when considering the strong engagement opportunities that exist with private sector. Please provide a more accurate breakdown of this with specific sources identified.	The co-finance figures have been revised with clear indication of sources. Additional resources will be sought and further clarified through proper consultations during Prodoc/CEO Endorsement development in the PPG phase.	All of the cofinancing is now defined as investment mobilized, with explanations provided at the foot of Table C.
While the project will not use CW funds, it would still seem appropriate to include an estimate of metric tons of chemicals eliminated or avoided as this will surely be a co-benefit of the investment activities in sustainable agriculture.	Links with the Global Chemicals program that FAO is putting together for the November Council - where Vietnam is a tentative country ? will be further discussed in the upcoming period.. Linkages will be subject to the Government confirmation and baseline studies.	Vietnam is not included in the Global Chemicals Program, at this time. Estimates of project co-benefits in terms of reductions in pesticide emissions are now presented in the section on Global Environmental Benefits.
Gender issues		
Gender (in terms of the overall context, the connection to training, access to land and finance, influence at the policy level etc) and engagement of key stakeholders such as civil society (NGOs, private sector associations, farmers cooperatives) etc needs to be more adequately considered in the project.	The PIF has now taken stronger gender focus in both capacity building, empowerment, advocacy and facilitation of women?s access to resources, in the light of to the key principles and provisions of SDG-5 and CEDAW convention and good practices from development partners.	A detailed gender analysis and action plan are included in Annex I.1 and I.2, including specific indications of how and where gender issues are mainstreamed in the project and accounted for and budgeted within the Project Document.

GEF Sec review	Agency response (25 April 2019)	Agency response at submission for CEO Endorsement
Gender issues should be then better reflected in the result framework, and the indicators.	The GEF SEC?s comment is well taken in the new PIF version (see the last page)	Gender issues are now incorporated through the results framework, as relevant.

Responses to World Bank upstream review, 30 September 2020

Comment	Proposed response
GP-CP Linkages	
1. Innovation: Good acknowledgement of opportunity to innovate and scale through the IP. (Para 291)	None
2. KM: Thank you for prioritizing engagement with the Global Platform in your KM and Comms plan. (Para 355)	None
3. Output 4.2.1: We appreciate the commitment to regular knowledge exchange and coordination with the Global Platform.	None
4. Output 4.2.2: We appreciate the attention to developing coordination mechanisms with the Global Platform that efficiently address transboundary/ regional opportunities, especially as it relates to private sector engagement.	None
5. Annex T: The guidance note on GP-CP linkages provided this table as a guide to be customized. We expect that GEFSEC will want to see more explicit detail about how these linkages can be customized to the Vietnamese context. Here, you could specify what activities in your workplan would benefit from GP involvement/support. We could follow up with a discussion, if helpful. We list here some opportunities for linkages with language pulled directly from the Project Document:	In addition to having initially edited the table to leave only those linkages that are applicable in the case of this project, additional rows have been added (Annex T, *in italics*) to explain the specific relevance and benefit of the linkages in the context of this project. The table is intended as a reference for the project implementation team regarding their commitments in relation to GP/CP collaboration; the additional italicized rows are intended to provide further motivation to the team for delivering on those commitments.
Private Sector Engagement	
6. Thank you for the clear articulation of the need to coordinate in the PSE section (Para 306). On Output 2.1.3, certainly, CPs are encouraged to develop relationships with multi-stakeholder platforms. To ensure that the asks are coordinated, please keep the Global Platform informed of discussions with WBCSD and Rabobank. These may be expandable to other countries and commodities.	Additional text inserted under Output 2.1.3 in this regard.

Comment	Proposed response
7. The information included in the Private Sector Engagement section is clear and useful. We would encourage the project design team to consider more specific opportunities for engagement in-country, especially where the Global Platform can support.	Additional text has been added to the PSE section explaining relations with PS actors at national level, including Olam, PAN and Loc Troi, and the regional/global dimensions of this (including the role of the GP in seizing regional level IP synergies).
8. Value chains: Good overview of rice value chain in Vietnam early in the document (Para 37). It would be helpful to link the opportunities identified in this section to the PSE section. That is, how can this project address insufficient branding, weak market development, lack of strong linkages in the value chain, and food safety? The sector is demonstrating increased vertical integration, so it would be useful to indicate how that process is led and how can the project use integration to reach more of the value chain efficiently.	Additional text has been added to the PSE section relating the partnerships to the issues highlighted in the value chain SWOT analysis.
9. Farmer Engagement: It will be helpful to explain more fully how the project will tap into existing, robust capacity building/training/TA delivered through National Extension system and field-based technical support from MNCs. Would there be an opportunity for the Global Platform to support and potentially pilot similar approaches with an MNC that may have a footprint across FOLUR IP rice countries.	Addressed in the new text of the PSE section ?Private sector actors such as Olam, Loc Troi and PAN have well-developed support systems (extension, finance, marketing and technical) serving their supplier farmers, which will be considered to complement Government extension programmes and provide entry points for strengthening the supply side of value chains (including capacities for compliance with environmental sustainability standards)?? ?the national, regional and global reach of companies such as Olam will also permit the exchange of lessons on collaborative famer support and other scaling-up aspects of PSE among countries, with support from the GP?.
10. Finance: There are good mentions of blended finance instruments under development, as well as the AGRI-3 Fund. It will help to indicate which piece of the value chain these investments will target.	Additional text added to Output 2.1.3: ?Key areas of the value chain where such support is likely to be needed (as suggested by the value chain SWOT analysis summarized in paragraph 40) include upfront investment in new machinery and inputs, processing/value adding, branding and packaging, as well as the costs of certification and audits, and systems for traceability and internal control.?
11. The project could also indicate efforts to pursue other opportunities for private or public/private investment and how to leverage the strengths of Global Platform Core Partners, including IFC.	This potential leverage of IFC strengths is now referred to under Output 2.1.3.

Comment	Proposed response
12. It seems that up to four standards may be promoted in the landscape (Para 246). The project plans to promote SRP as opposed to more widely accepted standards like Global GAP and VietGAP. It would help to indicate or cite the assessment that led to this choice, that is what is the comparative advantage of the SRP over the others. It will help to articulate how SRP is a value-add for farmers and value chains clearly articulated in a paragraph or table (Para 156).	The text on the SRP Standard under Section 3 has been modified to clarify that the project does not in fact aim to promote SRP to the exclusion of other standards. Different standards will be considered and promoted in different situations (now set out in the text); also, the promotion of compliance with the SRP Standard will be used as one entry point that will enable farmers also/alternatively become certified under other sustainability standards, as they wish and/or are applicable. The ToC has also been modified to avoid it referring exclusively to the SRP.
13. Exporters have stopped using national sustainability standards, so the project will likely need specific efforts to educate them on SRP or encourage price premia equal to Thai competition. Can these be described?	The project budget does provide for (jointly-funded) workshops to develop an overall Framework of Action on value chains, and private sector value chain action plans, which will also address issues of sustainability standards; as well as training and consultation workshops for farmers and value chain actors on the identification and development of green value chain opportunities. In addition, an important element of FAO cofinancing will be a USD400,000 TCP project supporting development of Vietnam?s National Plant Health Strategy, in collaboration with the Plant Protection Department of MARD: this includes investments in raising awareness on Integrated Pest Management (IPM) and the use of economically attractive market-based instruments leveraging sustainability protocols. This has been explained at the end of text on Output 2.2.3.
14. Please describe the methods for promoting standards to farmers and how those will be applied in different provinces when you may have different production methodologies or interests. (Para 214)	The text under Output 2.2.3 describes how the project will help farmers in defining which standards are right for them, example through the facilitation of farmer field schools, and through planned consultations among farmer and farmer groups/cooperatives, private sector and Government.
15. Please clarify the description of the SRP Standard: In Para 243 it?s noted as ?widely promoted, applied and accepted,? but in Para 154 it?s described as a pilot with ?relative novelty and limited degree of application.? There?s also discrepancy about how easy the standard will be to implement. Understanding the stage of development would help the Global Platform think about appropriate types of support.	The wording of these two references of the standards has been improved for the sake of consistency: in essence, it is widely promoted, applied and recognised in the project areas (but still with significant room for growth), but its degree of market insertion is still far short of its potential.

Comment	Proposed response
16. Market mechanisms: The document notes that consumer willingness to pay for premium products will not drive market development in Vietnam and should not be relied on to realize this project?s outcomes. However, it is a critical assumption in the TOC. It would be useful to clarify if there are any proposals or analysis regarding how that willingness to pay may evolve over time, changing domestic consumer demand for organic/sustainable rice.	This inconsistency has been addressed in the text (the statement in paragraph 80 that ?the success of the implementation of sustainable production practices will crucially hinge on consumer demand for sustainably produced rice and consumer awareness? has been removed). The reference to consumer demand and willingness to pay is now presented in the ToC as an impact driver (which contributes to impacts but is not a critical requirement for them to occur). The description of value chains and standards (paras 78-81) refers to studies on markets and willingness to pay for sustainable/certified products: it suggests that demand is growing especially among middle-class and urban consumers, a sector of the population that is itself growing in size, which would suggest that demand will increase further in the future.
IP Results Framework/Indicators	
17. We confirm appropriate alignment to the GP and IP Results Frameworks. Thanks to the team for this effort.	None
18. M&E: Thank you for the clear confirmation of alignment in indicators with the FOLUR IP and coordination of reporting process with the Global Platform. (Para 266, 366)	None
Further Definition of Outcomes/Outputs	

Comment	Proposed response
19. Outcome 1.1: Please indicate the lead of the multi-stakeholder platform and indicate how it will handle neutral facilitation, regular meetings and continued inter-provincial participation. During implementation it will be important to ensure that marginalized communities have a voice in the discussion ? even through local languages. This would be consistent with the government?s function to ensure compliance with Rule 120? (Para 197)	The precise composition and functioning of the multi-stakeholder platform will be confirmed at the start of the project, as will its relation with the recently-established Mekong Delta Coordinating Council (the functioning of which is also still in the process of being defined in detail). It is anticipated that the Ministry of Planning and Investment (MPI) will participate in and support the functioning of the MDCC, and it has the potential to do the same in the multi-stakeholder platform proposed under the project: given that it is not sector-specific, MPI has the potential thereby to act as such a neutral facilitator. In addition, the platform will be coordinated by a joint task force of relevant stakeholders. As explained in Annex J of the ProDoc, in relation to ethnic minorities, the Committee for Ethnic Minority Affairs will, in accordance with its mandate, play a key role as interlocutor between the project and ethnic minorities, and in ensuring and facilitating their effective participation in dialogue; Annex J also stipulates that where necessary translation will be available for Khmer/Cham speakers participating in dialogue mechanisms. The project team will include a National technical expert on integrated landscape and natural resource management, participation and livelihoods, one of whose ToRs will be to oversee and advise on the implementation of the project?s strategies for stakeholder engagement and participation of ethnic minorities, including the proposed multi-stakeholder dialogue mechanisms.
20. Output 1.3.2: In defining the the target of 80% provincial Government staff trained on ILM, please indicate which agencies are included so that it is clear that the staff have relevant mandates. (Para 209)	The indicator now specifies ?DONRE and DARD.?
21. Output 1.4.1: During implementation and reporting, it will be important that the framework indicators roll up through each level, so that it is cohesive across scales.	The concept of vertical integration and complementarity among levels has been strengthened under Output 1.4.1.
22. Output 2.2.1: It would be helpful to have a bit more explanation on the development of a public/private Framework for Action and strategic action plans for farmers and how those will be coordinated or linked to the multi-stakeholder platform. It may be a risk to have too different platforms/stakeholder groups created.	It is now proposed under Output 2.2.1 that In order to avoid an excessive proliferation of platforms and other dialogue spaces, the development of this framework will if possible be carried out using the space created by the multi-stakeholder platform proposed under Output 1.1.1.
Broader Considerations	
23. External factors: There are complex landscape-level impacts on rice production, which are well-described.	None

Comment	Proposed response
24. The participatory approach to selecting management and production practices is good, as are the broad categories that would be supported by the project. However, the project with limited resources will need to focus on a subset of priority actions / categories deemed critical by farmers. (Para 184)	It has been clarified in paragraph 187 that ?GEF project support will be specifically focused on production and management options that satisfy the criteria listed in Box 9: these will further be narrowed down to a number that can practically be covered with project resources through participatory farmer field schools, as proposed under Outcome 2.1.?
25. Community and province selection: We support the criteria that targets marginalized and impoverished communities. The rationale for target provinces in a contiguous block following the watershed is convincing, especially if all provinces show uptake and harmonization of the approach. You may want to discuss under risk mitigation how to address the issue if communities or provinces don?t demonstrate as much uptake as expected or if the private sector is less interested in these areas. (Box 11 and 12)	Additional text is included: ?197. The suitability of the target districts and communities will be continuously reviewed following project submission and during implementation, with the possibility of switching to alternatives. This would be subject to consultation with the local project advisory committee, and would only be undertaken if absolutely necessary given its potential effects on project progress. The risk of the need for this arising, for example due to possible changes in levels of buy-in by local stakeholders, will also be mitigated by ensuring adequate and continuous consultation with these actors, the promotion of their active participation, and the responsiveness of project management to their concerns.?
26. Stakeholder buy-in: A 2018 study is referenced as to stakeholder preferences. The study findings also note, ?A clear challenge will be to retain the clear benefits of a stable market and flood protection to life and homestead in a diversified flood-based livelihood, as found as the preference of farmers to the high-dike farming systems based on the interview results?a failure to attain these may otherwise quickly turn the scales of costs and benefits on these now seemingly attractive alternatives.? To this point, it will be helpful to explain a bit further how the project will work toward / guarantee some quick wins to maintain buy-in. (Para 178)	Annex U in fact shows that the diversified flood-based options are more profitable (and therefore offer quick wins). Quick buy-in can be achieved by 1) pilots to demonstrate these benefits and 2) the engagement of private sector actors to ensure that farmers have reliable and favourable access to markets for these products of these sustainable options.
27. Alignment with Govt Priorities could be more fully explained, for example the government?s new triple-commodity focus of aquaculture-horticulture-rice.	Paragraph 176 now also states that the project ??is also closely aligned with more specific policy and programming instruments including the MARD Program for Sustainable Agricultural Transformation (PSAT) (paragraph 90) which prioritizes, for example, climate-smart agriculture, no-regret approaches, a structural commodity change from a ?rice first? policy to ?aquaculture ? horticulture ? rice?, and inter-provincial and landscape approaches.?

Comment	Proposed response
28. Similarly, some lessons of experience on Agency Collaboration (MoNRE and IPSARD) on joint project administration would be welcome.	FAO has previously collaborated with MONRE and MARD on the joint implementation of a project on POPs, in which the two institutions complemented each other successfully: MONRE was able to take advantage of the network of field level actors to which MARD had access but MONRE would otherwise not have had. The document does, however, recognise inter-sector collaboration as a challenge for the project, and at the same time one of the most important elements of its expected legacy. The proposed mechanisms for project implementation will take this into account, with MONRE and MARD/IPSARD jointly represented on structures at central level, mirrored by DONRE/DARD joint participation at local level. The relation between MONRE as Executing Agency and IPSARD as partner OP will also be provided for by the MONRE/MARD ?Responsibility Agreement? as highlighted within the organogram.
29. Gender considerations in the landscape were thoroughly researched and thoughtfully accounted for in the gender-specific action plan. We welcome additional discussion with our gender lead, if helpful.	We would welcome any observations on gender aspects of the project from the WB gender lead.

Responses to Council comments at PFD review

The Council comments have been addressed in detail in project formulation. Of particular importance are the following.

LDN targets/UNCCD	Project contributions to LDN targets are now set out in the section on Consistency with National Priorities (paragrap 373). Additionally, reference to LDN indicators is part of the project?s monitoring and evaluation plan.
Gender analysis	A detailed gender analysis has been conducted during PPG and is presented in Annex L1.
Youth	Youth and women participation has been incorporated into the project design, in particular for the capacity development under Output 2.1.2.
Alignment with IP	Close alignment with the Global Knowledge to Action (K2A) platform project was sought during the child project development, including alignment of outcomes, outputs and indicators where relevant. Project M&E will be closely coordinated with the program M&E.
Adaptation benefits	Resilience building and capacities for adaptation have been incorporated as integral part of the project design, as described in *Section 3) Proposed alternative scenario*.

Responses to STAP comments at PFD review

The STAP comments have been addressed in detail in project formulation. Of particular importance are the following:

6) Global Environmental Benefits (*trade-offs*)	The project itself does not actively promote transitions away from intensive rice monocropping to less intensive systems nor alternative crops, and is not in itself responsible for generating trade-offs that may result from this in the short term. Annex X indicates how the proposed project options were considered and designed to generate win-win outcomes and a calculated-transition, (as opposed to wide spread livelihood trade-offs).
6) Global Environmental Benefits (*climate change*)	The implications of climate change, and the related phenomena of sea level rise and coastal erosion, are detailed in paragraphs 92-104. Boxes 4 and 6 propose specific options for addressing climate change, including the application of Nature-Based Solutions (NBS) such as the restoration of mangroves and river-side vegetation; the overall diversification of household-level farming systems; and the promotion of flood-based systems capable of buffering against extreme river flow variations.
7) Innovativeness, sustainability and potential for scaling-up	Section 7 of the ProDoc details linkages to regional and global dynamics and opportunities, the inclusion of innovative financing models, and its specific attention to Nature-Based Solutions as key areas of innovation of the project.
2. Stakeholders	Paragraphs 314-316 of the ProDoc explain in detail how the project will relate to the FOLUR IP Global Platform, the Sustainable Rice Platform and the WBCSD.
3. Gender Equality and Women?s Empowerment	Detailed gender analysis is presented in Annex L1.

ANNEX C: Status of Utilization of Project Preparation Grant (PPG). (Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF (USD): **150,000**

Project Preparation Activities Implemented	*GETF/LDCF/SCCF Amount ($)*			
	Original budget	*Revised budget*	*Amount Spent To date*	*Amount Committed*
5011 Salaries Professional	8,491	-	-	-
5013 Consultants	74,700	116,828	80,756	36,072
5014 Contracts	4,200	6,300	6,300	-
5020 Locally Contracted Labor	-	7,109	2,609	4,500
5021 Travel	21,000	12,000	8,921	3,079
5023 Training	38,800	4,954	4,954	-
5028 General Operating Expenses	2,809	2,809	39	2,770
Total	**150,000**	**150,000**	**103,579**	46,421

ANNEX D: Project Map(s) and Coordinates

Please attach the geographical location of the project area, if possible.

Location of the Project Area

Target provinces

Coordinates of Target Province Centre Points

Location	Estimated Coordinates ? Lat/Long
An Giang	10.5070, 105.18360
Dong Thap	10.5720, 105.62772
Vinh Long	10.10109, 106.0019
Soc Trang	9.56604, 105.94551
Tra Vinh.	9.78185, 106.31118

ANNEX E: Project Budget Table

Please attach a project budget table.

Description, Units and Unit Costs	Total Cost per Component and Project Management						Total
Oracle code and description	Component 1	Component 2	Component 3	Component 4	M&E	PM	GEF
5570 Consultants	189,360	341,800	228,240	41,212	81,000	116,400	998,012
5650 Contracts (MoUs)	842,000	325,200	380,000	-	178,000	105,225	1,830,425

5900 Travel	80,000	50,000	40,000	91,500	7,500	-	269,000
5023 Training	551,000	394,000	200,000	40,000	75,000	10,000	1,270,000
5027 Technical Support Services	-	-	-	-	-	6,550	6,550
6000 Expendable procurement	4,000	184,000	660,000	-	-	-	848,000
6300 General Operating Expenses	24,200	26,300	10,500	15,000	-	56,600	132,600
TOTAL	1,690,560	1,321,300	1,518,740	187,712	341,500	294,775	5,354,587

Oracle code and description	**FAO administered (external audits & evaluations)**	**Total OPA Budget**	MoNRE	IPSARD
5570 Consultants	-	998,012	723,012	275,000
5650 Contracts (MoUs)	235,225	1,595,200	1,270,000	325,200
5900 Travel	-	269,000	184,100	84,900
5023 Training	-	1,270,000	876,000	394,000
5027 Technical Support Services	6,550	-	-	-
6000 Expendable procurement	-	848,000	844,000	4,000
6300 General Operating Expenses	-	132,600	106,300	26,300
TOTAL	241,775	5,112,812	4,003,412	1,109,400

ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencys is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).