



Public-Private Blended Finance Facility for Climate-Resilient Rice Landscapes

Part I: Project Information

GEF ID

10929

Project Type

MSP

Type of Trust Fund

MTF

CBIT/NGI

CBIT **No**

NGI **No**

Project Title

Public-Private Blended Finance Facility for Climate-Resilient Rice Landscapes

Countries

Regional, Bangladesh, Cambodia, Viet Nam

Agency(ies)

FAO

Other Executing Partner(s)

World Business Council for Sustainable Development (WBCSD) and other partners (under discussion)

Executing Partner Type

Others

GEF Focal Area

Climate Change

Taxonomy

Gender Equality, Focal Areas, Climate Change, Climate Change Adaptation, Private sector, Climate resilience, Livelihoods, Climate finance, Innovation, Least Developed Countries, Mainstreaming adaptation, Influencing models, Deploy innovative financial instruments, Demonstrate innovative approaches, Stakeholders, Indigenous Peoples, Civil Society, Non-Governmental Organization, Type of Engagement, Partnership, Participation, Consultation, Information Dissemination, Local Communities, Private Sector, Financial intermediaries and market facilitators, Capital providers, Large corporations, SMEs, Beneficiaries, Gender Mainstreaming, Sex-

disaggregated indicators, Gender results areas, Access to benefits and services, Capacity Development, Capacity, Knowledge and Research, Learning, Adaptive management, Theory of change, Knowledge Generation, Training

Sector

AFOLU

Rio Markers

Climate Change Mitigation

Climate Change Mitigation 0

Climate Change Adaptation

Climate Change Adaptation 2

Duration

36 In Months

Agency Fee(\$)

95,022.00

Submission Date

2/24/2022

A. Indicative Focal/Non-Focal Area Elements

Programming Directions	Trust Fund	GEF Amount(\$)	Co-Fin Amount(\$)
CCA-1	LDCF	400,228.00	1,458,957.00
CCA-1	SCCF-A	200,000.00	600,000.00
CCA-2	LDCF	339,071.00	1,128,521.00
CCA-2	SCCF-A	60,929.00	312,522.00
Total Project Cost (\$)		1,000,228.00	3,500,000.00

B. Indicative Project description summary

Project Objective

To catalyse public and private financing for climate-resilient rice landscapes, value chains and livelihoods

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount(\$)
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Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount (\$)
1. Designing an integrated financing mechanism for investments in climate-resilient rice landscapes, value chains and livelihoods - LDCF	Technical Assistance	<p><u>Outcome 1:</u></p> <p>Integrated financing mechanism designed leading to increased access by producers, value chain actors and governments to financing for climate-resilient rice[1] landscapes, value chains and livelihoods</p> <p><i>Indicators:</i></p> <p>? Resilient Rice Landscapes (RRL) Facility and associated funds[2] designed</p> <p>? Number of potential counterparts identified</p> <p>? Number of potential financiers identified for investment in the financing mechanism</p> <p>[1] May involve rice and other crops/commodities in rice landscapes.</p> <p>[2] Including (i) a de-risking facility, (ii) national revolving fund facilities, and (iii) non-returnable grant facilities.</p>	<p><u>Output 1.1:</u> Technical funding needs for adaptation and resilience in rice landscapes identified.</p> <p><u>Output 1.2:</u> Financing needs and opportunities in selected landscapes identified, including potential counterparts.</p> <p><u>Output 1.3:</u> Gender-responsive eligibility criteria for borrowers and grant recipients established based on considerations of potential to deliver adaptation and resilience benefits.</p> <p><u>Output 1.4:</u> Financial mechanisms designed and USD 500 million in public and private financing identified.</p>	LD CF	371,966. 00	1,082,087. 00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount (\$)
1. Designing an integrated financing mechanism for investments in climate-resilient rice landscapes, value chains and livelihoods - SCCF	Technical Assistance	Same as above	Same as above	SCCF-A	131,283.00	381,913.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount (\$)
2. Capacity development of national and local stakeholders - LDCF	Technical Assistance	<p><u>Outcome 2:</u></p> <p>Farmers (women and men), producer groups, counterparts and intermediaries have increased financial and technical capacities to invest effectively in climate resilience</p> <p><i>Indicators:</i></p> <p>? No. of stakeholders (m/f) and institutions with increased capacities</p> <p>? No. of partnerships established and operational</p>	<p><u>Output 2.1:</u> Training provided to counterparts and intermediaries on accessing, administering and investing the facility's funds. (<i>financial and technical aspects</i>)</p> <p><u>Output 2.2:</u> Partnerships established with local institutions and agricultural service providers to provide technical support and training to local stakeholders on climate-resilient practices, SRP, and organizational and financial skills.</p>	LD CF	153,000.00	739,130.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount (\$)
2. Capacity development of national and local stakeholders - SCCF	Technical Assistance	Same as above	Same as above	SC CF-A	54,000.00	260,870.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount (\$)
3. Impact monitoring, governance, and learning and knowledge sharing - LDCF	Technical Assistance	<p><u>Outcome 3:</u></p> <p>Program-wide impact monitoring, governance, adaptive learning and knowledge sharing mechanisms developed and implemented</p> <p><i>Indicators:</i></p> <p>? Program M&E and key performance indicators in place</p>	<p><u>Output 3.1:</u></p> <p>Adaptation metrics and mechanisms for impact monitoring, governance and safeguards identified and established.</p> <p><u>Output 3.2:</u></p> <p>Knowledge is captured and shared with relevant stakeholders nationally and regionally to support adaptive learning and scaling up.</p> <p><u>Output 3.3:</u></p> <p>Project monitoring and evaluation and adaptive learning undertaken.</p>	LD CF	147,124.00	530,293.00

Project Component	Financing Type	Project Outcomes	Project Outputs	Trust Fund	GEF Amount (\$)	Co-Fin Amount(\$)
3. Impact monitoring, governance, and learning and knowledge sharing - SCCF	Technical Assistance	Same as above	Same as above	SCCF-A	51,926.00	187,163.00
Sub Total (\$)					909,299.00	3,181,456.00

Project Management Cost (PMC)

LDCF	67,209.00	235,968.00
SCCF-A	23,720.00	82,576.00
Sub Total(\$)	90,929.00	318,544.00
Total Project Cost(\$)	1,000,228.00	3,500,000.00

Please provide justification

C. Indicative 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(\$)
Other	WBCSD	Grant	Investment mobilized	100,000.00
Civil Society Organization	Sustainable Rice Platform (SRP)	Grant	Investment mobilized	500,000.00
Other	International Rice Research Institute (IRRI)	In-kind	Recurrent expenditures	300,000.00
Donor Agency	Green Climate Fund (GCF) ? through FAO	Grant	Investment mobilized	500,000.00
GEF Agency	FAO	In-kind	Recurrent expenditures	100,000.00
Private Sector	Food Securities Fund S.A.	Loans	Investment mobilized	2,000,000.00
Total Project Cost(\$)				3,500,000.00

Describe how any "Investment Mobilized" was identified

Investment mobilized was identified in consultation with partners during PIF development in early 2022. It totals USD 3.1 million and includes (1) USD 100,000 in grant financing from WBCSD from the Just Rural Transition Initiative; (2) USD 500,000 in grant financing from the Sustainable Rice Platform (SRP) for investments in capacity building programs, the development of national chapters, and other work related to the SRP Standard, Performance Indicators and Assurance Scheme; (3) USD 500,000 in grant financing from GCF (through FAO) for a regional readiness project (in preparation); and (4) USD 2 million from the Food Securities Fund (an investment fund registered in Luxemburg), which would involve additional working capital for a rice transaction in the region (to be confirmed during PPG)[1].// In-kind co-financing includes USD 300,000 from IRRI for projects across the region related to sustainable agrifood systems, digital technologies, sustainable intensification, climate change adaptation and agroecological transition; and USD 100,000 from FAO's Regular Programme.// [1] Note: As explained in Section 6.b Coordination with other projects of the PIF, there is some GEF-7 Non-Grant Instrument (NGI) investment in the Food Securities Fund. It should, therefore, be noted that the co-financing indicated to the SRLI will not come from the NGI portion of the Food Securities Fund.

D. Indicative 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(\$)	Total(\$)
FAO	LDC F	Regional	Climate Change	NA	739,299	70,233	809,532.00
FAO	SCC F-A	Regional	Climate Change	NA	260,929	24,789	285,718.00
Total GEF Resources(\$)					1,000,228.00	95,022.00	1,095,250.00

E. Project Preparation Grant (PPG)

PPG Required **true**

PPG Amount (\$)

50,000

PPG Agency Fee (\$)

4,750

Agency	Trust Fund	Country	Focal Area	Programmin g of Funds	Amount(\$)	Fee(\$)	Total(\$)
FAO	LDC F	Regional	Climat e Change	NA	36,957	3,511	40,468.00
FAO	SCCF -A	Regional	Climat e Change	NA	13,043	1,239	14,282.00
Total Project Costs(\$)					50,000.00	4,750.00	54,750.00

Meta Information - LDCF

LDCF true

SCCF-B (Window B) on technology transfer false

SCCF-A (Window-A) on climate Change adaptation true

Is this project LDCF SCCF challenge program?

true

This Project involves at least one small island developing State(SIDS). false

This Project involves at least one fragile and conflict affected state. false

This Project will provide direct adaptation benefits to the private sector. true

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). false

This Project has an urban focus. false

This Project covers the following sector(s)[the total should be 100%]:*

Agriculture	100.00%
Natural resources management	0.00%
Climate information Services	0.00%
Costal zone management	0.00%
Water resources Management	0.00%
Disaster risk Management	0.00%
Other infrastructure	0.00%
Health	0.00%
Other (Please specify:)	0.00%
Total	100%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise true

Change in mean temperature true

Increased Climatic Variability true

Natural hazards true

Land degradation true

Costal and/or Coral reef degradation false

GroundWater quality/quantity true

Core Indicators - LDCF

CORE INDICATOR 1	Total	Male	Female	% for Women
Total number of direct beneficiaries	8,880	4,440	4,440	50.00%

CORE INDICATOR 2	
Area of land managed for climate resilience (ha)	2,220.00

CORE INDICATOR 3	
Total no. of policies/plans that will mainstream climate resilience	0

CORE INDICATOR 4		Male	Female	% for Women
Total number of people trained	4,810	2,405	2,405	50.00%

Meta Information - SCCF

LDCF true
 SCCF-B (Window B) on technology transfer false
 SCCF-A (Window-A) on climate Change adaptation true

Is this project LDCF SCCF challenge program?
 true

This Project involves at least one small island developing State(SIDS). false

This Project involves at least one fragile and conflict affected state. false

This Project will provide direct adaptation benefits to the private sector. true

This Project is explicitly related to the formulation and/or implementation of national adaptation plans (NAPs). false

This Project has an urban focus. false

This Project covers the following sector(s)[the total should be 100%]:*

Agriculture	100.00%
Natural resources management	0.00%
Climate information Services	0.00%
Costal zone management	0.00%
Water resources Management	0.00%
Disaster risk Management	0.00%
Other infrastructure	0.00%
Health	0.00%
Other (Please specify:)	0.00%
Total	100%

This Project targets the following Climate change Exacerbated/introduced challenges:*

Sea level rise true

Change in mean temperature true

Increased Climatic Variability true

Natural hazards true

Land degradation true

Costal and/or Coral reef degradation false

GroundWater quality/quantity true

Core Indicators - SCCF

CORE INDICATOR 1	Total	Male	Female	% for Women
Total number of direct beneficiaries	3,120	1,560	1,560	50.00%

CORE INDICATOR 2

Area of land managed for
climate resilience (ha) 780.00

CORE INDICATOR 3

Total no. of policies/plans
that will mainstream
climate resilience 0

CORE INDICATOR 4

		Male	Female	% for Women
Total number of people trained	1,690	845	845	50.00%

Part II. Project Justification

1a. Project Description

1) Global environmental and/or adaptation problems

a. Rice production and consumption globally and in Asia

1. Rice is the primary staple food for 3.5 billion people, more than half of the world's population, and provides over 20% of the global caloric intake. It is also the main staple crop of Asia. In lower-income countries of South and Southeast Asia, up to 70% of people's dietary energy comes from rice. Rice is the third largest crop globally (after wheat and maize) in terms of area harvested. Most of the world's rice is consumed close to where it is produced; less than 10% is traded internationally compared to about 18% for wheat and 25% for soybeans.^{[1],[2]}

2. Around 150 million mostly poor smallholder farmers worldwide depend on rice production for their livelihoods, growing it on small plots of land of often less than a hectare. Rice is typically integrated into diverse farming and livelihood systems, complemented by a range of other crops, small livestock, aquaculture and off-farm employment; and forms part of complex 'rice landscapes' made up of production areas, natural ecosystems and urban areas, which are connected by flows of environmental services and socioeconomic dynamics.

3. Rice is both a contributor to climate change and is vulnerable to climate change impacts. Rice is highly exposed to the effects of climate change and water scarcity. Global production of rice is expected to fall by 15% by 2050 due to climate change. However, an increase of 26% in rice production is needed to meet global demand by 2035. Meanwhile, it is estimated that rice uses 40% of all irrigation water globally and is responsible for 10% of the world's methane emissions.^{[3],[4]} Rice also impacts the environment through overuse of agrochemicals, conversion of natural wetlands, and clearing of forests for agriculture.

4. Although rice is grown in over 100 countries worldwide, over 85% of global production is from eleven Asian countries (including China, India, Bangladesh, Indonesia, Viet Nam, Thailand, Myanmar, the Philippines, Cambodia, Japan, and Pakistan).^[5] In total, Asia accounts for approximately 90% of global rice production, 75% of global consumption, and 70% of exports.^[6] Any major events affecting the availability or price of rice, such as harvest failures, export restrictions or sudden price increases, would pose a threat to the food security of millions of people. In Cambodia, for example, it is estimated that a 10% rise in the price of rice could lead to a 0.5% increase in the poverty rate. At the same time, for millions of smallholder producers, falling rice yields and other climate change impacts represent an existential threat to their livelihoods.^[7]

5. **Bangladesh** is the third-largest producer of rice and a net importer of rice.^[8] **Cambodia** has experienced rapid yield gains since the 1990s and is today the world's tenth-largest producer and seventh-largest exporter of rice. However, yields are still low compared to other countries in the region and in the world due to a lack of access to inputs including fertilisers, high-quality seeds, and credit. Also, the increase in yields was often achieved by higher rather than more efficient use of inputs, resulting in negative impacts to both environment and human health. **Viet Nam** is currently the fifth-largest rice producer in the world and the third-largest exporter, with a relatively high average yield of nearly 6 tonnes/hectare. However, both rice yields and the amount of land suitable for rice cultivation are threatened by saltwater intrusion and other climate and non-climate factors.^[9]

b. Climate change impacts

6. Rice production landscapes and value chains across Asia are increasingly exposed to severe climate risks and hazards, posing a major threat to global food supply and livelihoods. Climate change is already limiting production due to factors including temperature stress; changing rainfall patterns and seasonal flooding patterns; soil and aquifer salinization due to sea level rise; pest and disease pressures; and increased frequency and intensity of extreme weather events. Rice-reliant communities are particularly sensitive to climate impacts and often have very low adaptive capacities, largely constrained by a limited supply of relevant financial services.

7. Rice is vulnerable to **high temperatures**, which has already led to crop losses in Asia in recent years.^[10] Computer simulations for major rice-growing regions of Asia have shown that rice yields would fall by up to 10% with every 1°C increase. In all three target countries of the project, temperatures are expected to increase with climate change (see also Annex 1). **Seawater intrusion** into rice-growing areas due to rising sea levels is increasingly impacting rice production. Saline conditions are expected to become increasingly widespread in deltaic production areas, potentially reducing yields by 15% in some of the world's principal rice-growing areas. **Drought**, crop loss due to prolonged **flooding** of rice fields, and an increased incidence of **extreme weather events** and **pests and diseases** are also likely to reduce rice yields.^[11]

8. A review of the vulnerability of Asian rice production to climate change highlighted the increasing risk of heat and drought stress across Asia. The review also emphasized that the **mega-deltas** which represent major rice-growing regions in Viet Nam, Myanmar and Bangladesh are particularly vulnerable to climate impacts as they are highly exposed to sea level rise and extreme weather events. In these deltaic regions, rice is often the predominant form of land use, and no other crop can be grown under the adverse conditions of unstable water levels and salinity. In these regions, significant improvements of the rice production systems are crucial for maintaining yields and increasing resilience to flooding and saltwater intrusion.^[12]

9. *Effect on yields.* A growing number of studies report that changes in climate variables have resulted in changes in crop productivity and production. However, the direction of these impacts varies across spatial scales reflecting the suitability of different crops to growing conditions at different locations. In general, an increase in CO₂ level is found to increase crop yields (carbon fertilization effect) while increases in temperature reduced yields. However, studies suggest that the negative impacts of climate change are more significant than the positive effects of CO₂ fertilization in almost all climate scenarios, and that immediate adaptation measures are required regardless of the emission scenario. Declines in yield are predicted, under various scenarios, for Thailand, Bangladesh, southern China and western India, in particular.^[13] On the other hand, evidence suggests that warming has benefitted crop production in some high-latitude regions, such as Japan and northeast China.

10. In relation to rice, a study in Cambodia found that the major climate hazards affecting rice production between 1994 and 2018 were frequent and extreme flood and drought events caused by rainfall variability^[1]. Another study, in Bangladesh, suggests that rice yield reductions will also be determined by increases in maximum temperatures^[2].

11. **Bangladesh climate change impacts.** Bangladesh is considered one of the countries most vulnerable to extreme events, climate variability and change.^[3] The country's location in the Bay of Bengal makes it susceptible to seasonal cyclones. Its location on a major floodplain increases the risks related to seasonal flooding. Low-lying coastal land is also vulnerable to future sea level rise. Bangladesh has already become hotter with a 0.5°C increase in mean temperature between 1976 and 2019.^[4] Predicted increases in annual average temperatures range from 0.73°C (SRES A2 scenario) to 0.78°C (B1 scenario) by 2030 and from 1.32°C (A2 scenario) to 2.1°C (B1 scenario) by 2050 over the base year 2010.^[5] Annual precipitation is predicted to increase from 4.92% (A2 scenario) to 6.30% (B1 scenario) by 2030 and from 8.1% (A2 scenario) to 8.41 (B1 scenario) by 2050. Floods, tropical cyclones, storm surges and droughts are likely to become more frequent and severe. Sea level rise and salinity intrusion is already being observed. Compared to the reference period of 1981-2010, the

projected maximum pre-monsoon temperature in Bangladesh indicates an increase by 0.7/0.7/0.7°C in the near future (2021?2050) and 2.2/1.2/0.8°C in the far future (2071?2100) assuming the RCP8.5/RCP4.5/RCP2.6 scenario, respectively^[6].

[1] Sok S, Chhinh N, Hor S and Nguonphan P (2021). Climate Change Impacts on Rice Cultivation: A Comparative Study of the Tonle Sap and Mekong River. *Sustainability* 2021, 13(16), 8979. <https://www.mdpi.com/2071-1050/13/16/8979/htm>.

[2] Increases of 2°C and 4°C in both minimum and maximum temperatures would result in reductions in *boro* rice yield of 10.41% and 22.87% respectively. Basak, J.K. (2008). Climate Change Impacts on Rice Production in Bangladesh: Results from a Model. Published by Unnayan Onneshan ? The Innovators. Dhaka, Bangladesh.

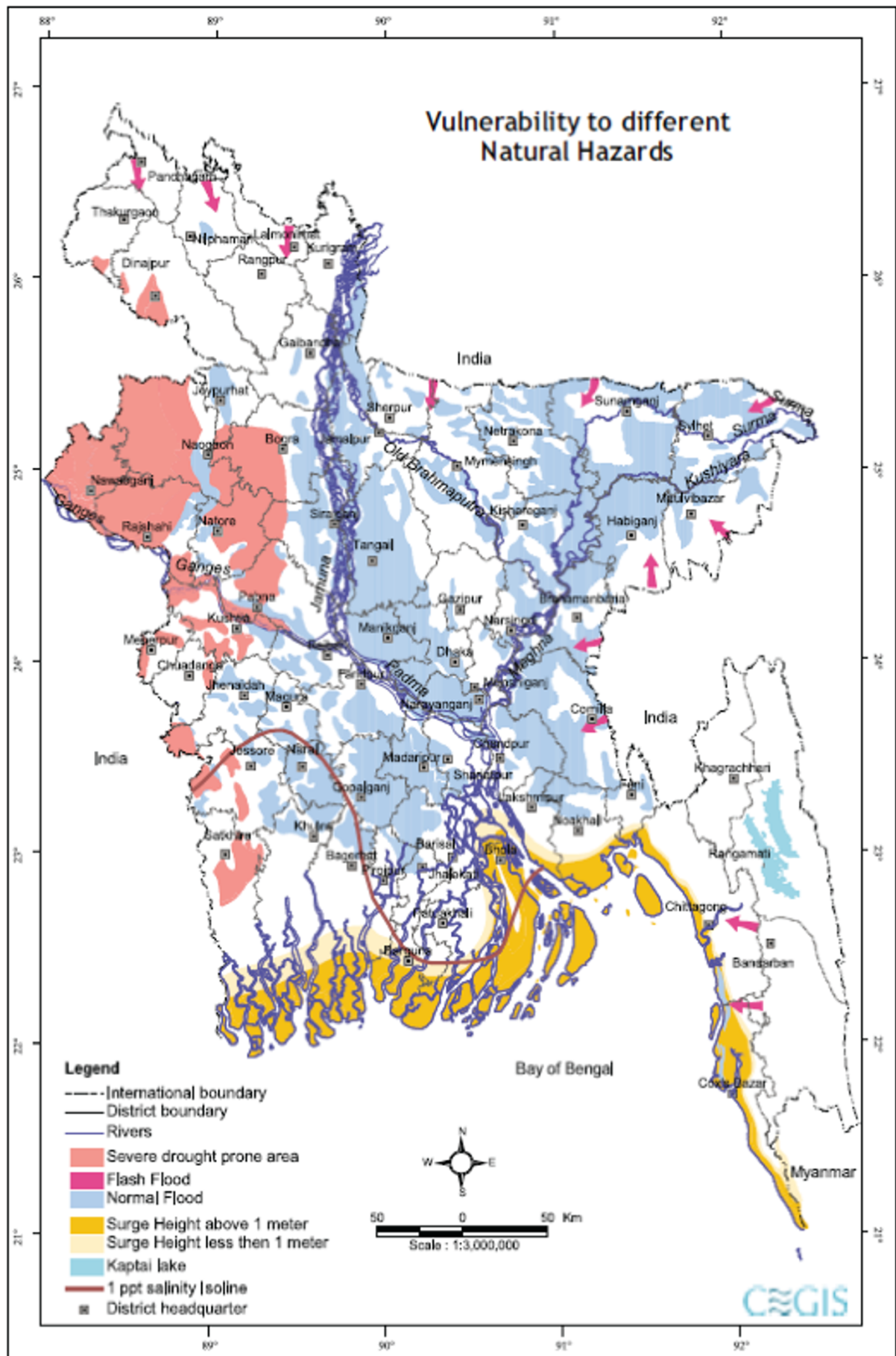
[3] Germanwatch. Global Climate Risk Index 2000 ? 2019.

[4] World Bank (2021). <https://documents1.worldbank.org/curated/en/819691634012303755/pdf/Hotter-and-More-Humid-with-Erratic-Rainfall-Climate-Change-in-Bangladesh.pdf>

[5] Ministry of Environment and Forests, Government of the People?s Republic of Bangladesh (2012). Second National Communication of Bangladesh to the UNFCCC. <https://unfccc.int/resource/docs/natc/bgdnc2.pdf> and

<https://doi.org/10.1007/s12040-012-0159-9>
Rahman, Md *et al.* (2012). Rainfall and temperature scenarios for Bangladesh for the middle of 21st century using RegCM. *Journal of Earth System Science*. 121. 10.1007/s12040-012-0159-9.

[6] Rashid, M. B., Hossain, S. S., Mannan, M. A., Parding, K. M., Hygen, H. O., Benestad, R. E., and Mezghani, A.: Climate change projections of maximum temperature in the pre-monsoon season in Bangladesh using statistical downscaling of global climate models, *Adv. Sci. Res.*, 18, 99?114, <https://doi.org/10.5194/asr-18-99-2021>, 2021.



Source: CEGIS, Dhaka.

Figure 1: Vulnerability to different natural hazards in Bangladesh[1]

[1] Source: Third National Communication, 2018.

https://unfccc.int/sites/default/files/resource/TNC%20Report%20%28Low%20Resolution%29%2003_01_2019.pdf

Note: The boundaries and names shown and the designations used in these maps do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

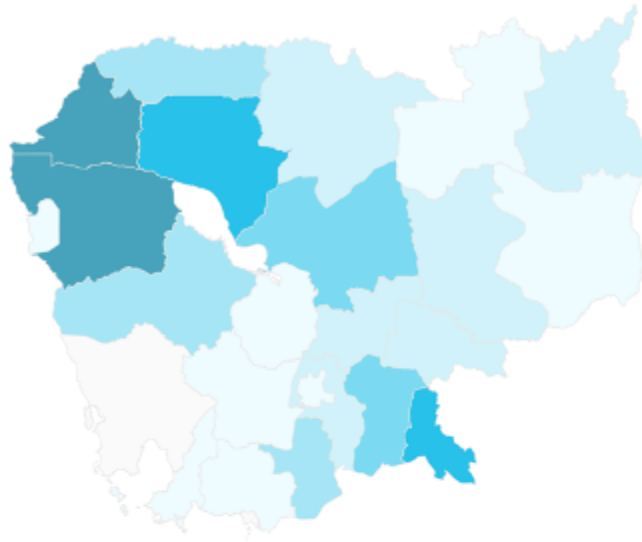
12. An ADB 2014 study on costs of climate change and adaptation in South Asia[14] shows that climate change would lead to a substantial yield reduction in rice crops in Bangladesh. Among the different climatic regions, the ADB study projects that maximum yield reduction will happen in the south-eastern and south-western regions of Bangladesh. Rice yield would decline by 5.3% for *aus* (cultivated in July-August), 4.9% for *aman* (December-January) and 4.6% for *boro* (March-May) in the south-eastern regions by 2030. Further deterioration of rice yield would occur beyond 2030. Rice yield in the south-eastern region would decline by 10.3% for *aus*, 9.5% for *aman* and 5.5% for *boro* by 2050. The decline in rice yield in the south-west region is projected at 6.2% for *aus*, 5.6% for *aman* and 4.9% for *boro* by 2050.[15]

13. **Cambodia climate change impacts.** Climate change poses significant current and expected risks to Cambodia, particularly for farmers. Forecast trends indicate a wetter wet season with more intense rainfall events (leading to increased flooding), a hotter and drier dry season (leading to increased droughts), a later onset and shorter duration of the wet season (leading to longer droughts and more crop failures), and increased variability in weather patterns. Agriculturally reliant communities, such as those in the Tonle Sap plain, are particularly vulnerable to these threats given the high exposure and high sensitivity, especially those relying on rain-fed production of relatively lower-value commodity crops such as rice. Additionally, these communities and the institutions that support them generally have low adaptive capacities, particularly at sub-national levels. Under future climate conditions (2025 and 2050), most of Cambodia's agricultural areas will be exposed to higher drought risks. The growing period for most agricultural areas will be less than five months (between two and three months). Efforts to increase the planting index of more than 1.0 may be impossible without the development of irrigation facilities. Based on data from the past 20 years, losses in production were mainly due to flooding (about 62%) and drought (about 36%). Most flooding occurs due to increased water levels in the Mekong River and Tonle Sap Lake between early July and early October. These two water bodies are linked to each other, and the increase in water levels in the Mekong River is closely related to rainfall throughout the basin.[1]

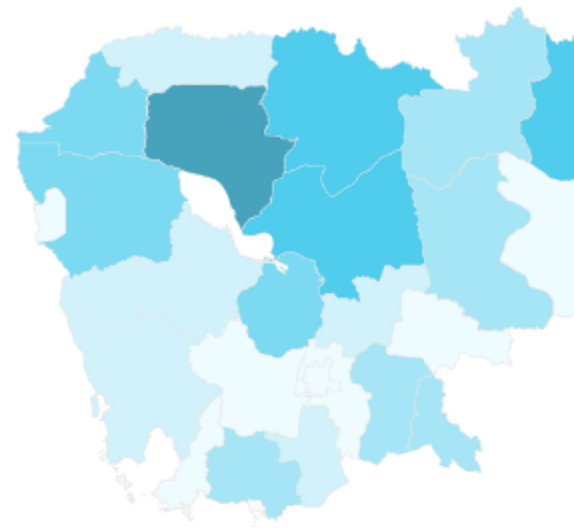
[1] Cambodia Second National Communication (2015).
<https://unfccc.int/resource/docs/natc/khmnc2.pdf>

14. In Cambodia, impact of climate change on yield is also considered significant. Under the high emission scenario (SRES-A2), wet season rice yield (rain-fed) is continuously expected to decrease until 2080 and could fall by up to 70% of current yield levels. Similarly, for the dry season, (irrigated) rice yields for crops planted in November and December could decrease by 40%. Under the low emission scenario (SRES-B1), the yield decrease ranges from 60% to about 20%. [16]

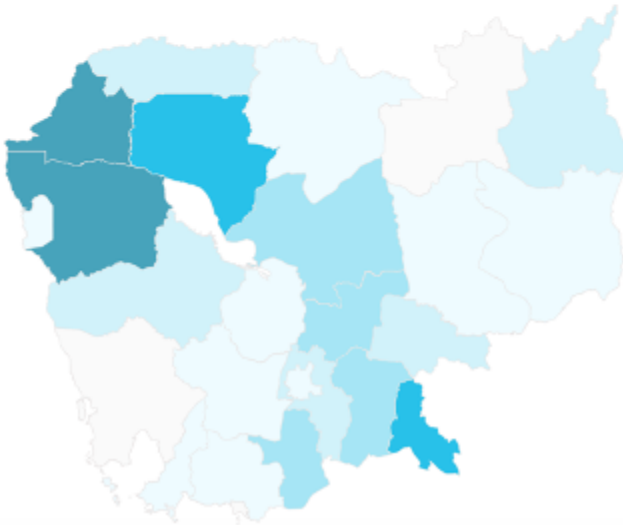
Composite Risk



Drought Risk



Flood Risk



Storm Risk

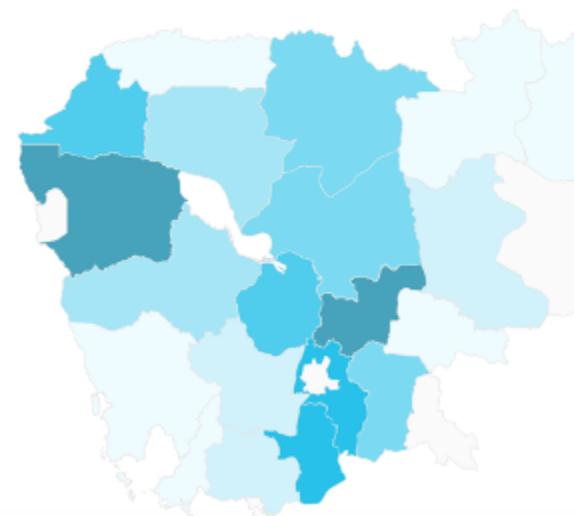


Figure 2: Provincial Proportions of Communes in Cambodia at High Risk of Climatic Hazards^[1]

^[1] NCS D (2016); https://ncsd.moe.gov.kh/standard_report_visualize_final_report/

Darker shades represent higher proportions of communes at high risk of climatic hazards. Light grey = unrated/ missing data.

From Cambodia GEF-7 LDCF Project Document "Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region" (GEF ID 10177).

15. **Viet Nam climate change impacts.** The annual average temperatures in all regions of Viet Nam are expected to increase compared to the base period of 1986-2005. Under the medium scenario (RCP4.5), average annual temperatures would rise by 1.3-1.7°C nationwide by the middle of the century; and by 1.9-2.4°C in the North and 1.7-1.9°C in the South by the end of the century. Under the

high scenario (RCP8.5), temperatures rise by 1.8-2.3°C nationwide by the middle of the century; and by 3.3-4.0°C in the North and 3.0-3.5°C in the South by the end of the century. Extreme temperatures are likely to show a clear increase. Annual rainfall tends to increase nationwide. Under both medium and high scenarios, annual rainfall is expected to increase by 5-15% by mid-century and up to 20% by the end of the century. The average one-day maximum rainfall rises across the country (10-70%) compared to the base period. Sea level rise, increasing average flood volumes and cyclones will increase the depth and duration of floods.[1]

[1] The Socialist Republic of Viet Nam (2020). Updated Nationally Determined Contribution (NDC).

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/Viet%20Nam_NDC_2020_Eng.pdf

16. In Viet Nam, it is estimated that if the sea level rises by 100 cm, the Mekong Delta and Ho Chi Minh City are at risk of losing 40.5% of total rice production in the region. By 2050, according to the average scenario of climate change, the potential yield of spring paddy may be decreased by around 717 kg/ha equivalent to 2.16 million tonnes; potential yield of summer-autumn rice may drop around 795 kg/ha equivalent to 1,470 thousand tonnes of production. [17] The period of agricultural drought per year is likely to significantly increase in large areas in the south and east of the Mekong Basin by 2050. Areas of the Mekong Delta will experience a 10% to 100% increase in drought months.[1] With the rise of temperature and extreme events, the number of typhoons operating in the East Sea and affecting Viet Nam may have a lower frequency, but with higher intensity as well as number of storms. Severe cold weather days also tend to decrease, but the number of cold spells becomes unpredictable and fluctuates from year to year.[2]

[1] ICEM (2013). USAID Mekong ARCC Climate Change Impact and Adaptation Study for the Lower Mekong Basin: Main Report. Prepared for the U.S. Agency for International Development by ICEM ? International Centre for Environmental Management.

https://www.usaid.gov/sites/default/files/documents/1861/USAID_Mekong_ARCC_Climate_Change_Impact_and_Adaption_Study_Main_Report.pdf

[2] Vietnam Third National Communication (2019). <https://unfccc.int/documents/192805>



(a) in the middle of the 21st century



(b) in the end of the 21st century

Figure 3: Change of average annual temperature (°C) according to RCP4.5 scenario^[1]

^[1] Source: *Climate change and sea level rise scenarios for Viet Nam*, MONRE, 2016. Cited in Vietnam Third National Communication (2019). Note: The boundaries and names shown and the designations used in these maps do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

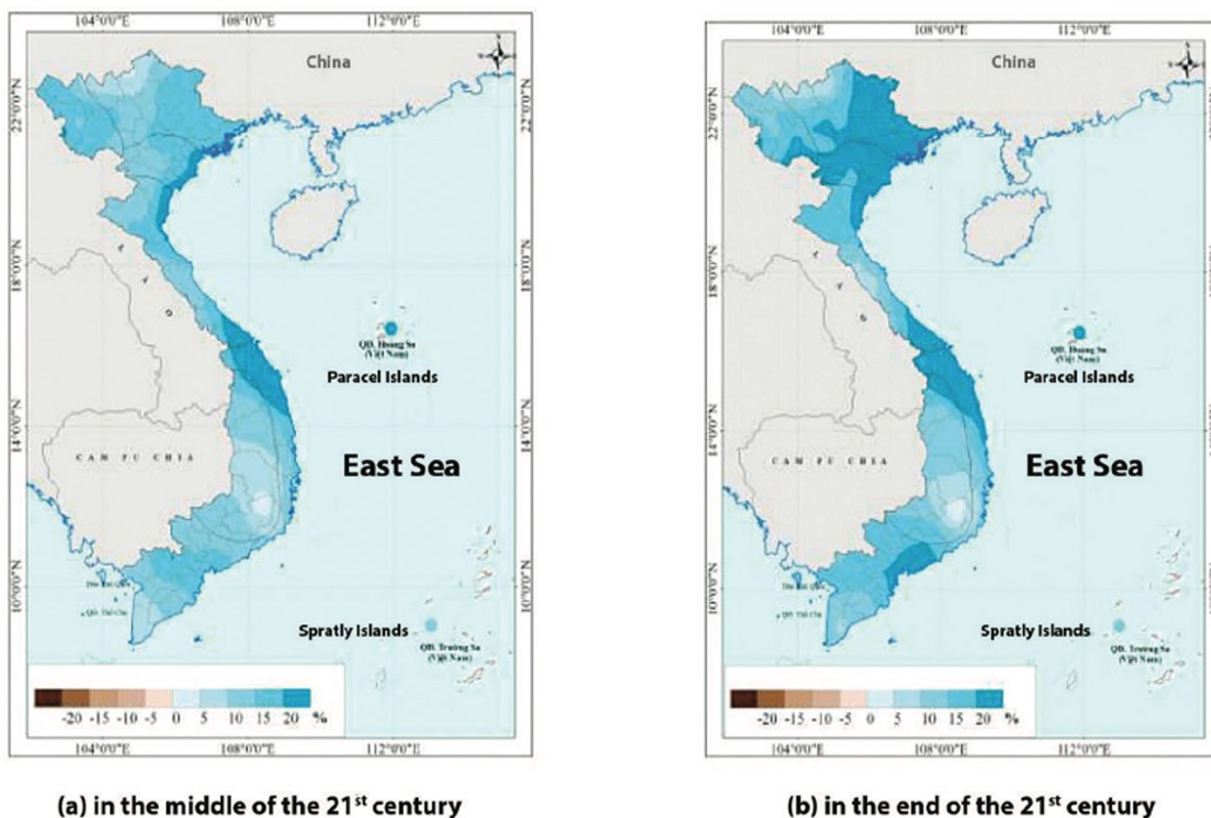


Figure 4: Change of average yearly rainfall according to RCP4.5 scenario

17. *Impacts of climate change on labour and total factor productivity (TFP).* The modelled impact of changes in temperature on rice production are even more significant when accounting for the impacts of climate change on agricultural laborers. Higher temperatures, humidity and radiation are expected to significantly reduce agricultural workers' capacity to work in the field, hence increasing the number of workers required to maintain adequate food supplies.^[18] It is estimated that climate change has reduced global agricultural total factor productivity (TFP) by about 21% since 1961.^[19] This suggests that adaptation strategies need to go beyond on-farm practices and look specifically at agricultural workers.

Adaptation options in rice landscapes

18. Considerable investment in adaptation strategies is needed to alleviate the adverse effects of climate change on food security and livelihoods in rice landscapes.^[20] There are strong risks of maladaptation through, for example, increased aquifer extraction for irrigation to combat water and heat stress, especially during drought periods, and excessive use of agrochemicals to counter yield loss, pests and diseases. A range of proven management options and technologies are available for delivering adaptation benefits in rice landscapes, including best-practice solutions under the Sustainable Rice Platform (SRP) Standard for Sustainable Rice Cultivation. However, further support and financing is needed to support their adoption. In addition, adaptation planning at the landscape level is needed to avoid maladaptation or leakage (displacing negative impacts elsewhere). Diversification away from rice (e.g., transition to new crops such as pulses and oilseeds) may also be an adaptation option, especially in areas where rice farming becomes limited due to drought and saltwater intrusion.

19. The financing instruments to be developed through the project will support a range of proven technical options for Climate Smart Agriculture (CSA)^[21] in rice landscapes, targeting not only rice

but also the other crops in the landscape that are associated with the farming systems and livelihood systems of rice farmers and/or which affect the resilience of the populations living in the landscapes^[22]. These options, accompanied by the necessary technical assistance and increased access to agricultural extension services, have the potential not only to build resilience of rice landscapes and associated value chains, but also to enhance incomes and livelihoods of local farmers, in particular of women and vulnerable social groups. Table 1 below details how the specific adaptation solutions to be supported through the project respond to the predicted impacts of climate change on rice production and farming/livelihood systems, as well as related SRP themes/performance indicators.

- Climate-resilient/smart crop production may include the use of quality seeds and planting materials of well-adapted varieties; the cultivation of diverse suites of crop species and varieties in associations and/or rotations in order to spread risk (for example rice-soybean/mungbean); the use of integrated pest management practices to avoid maladaptive responses to CC-related pests and diseases; and the implementation of conservation agriculture and the adoption of sustainable mechanization to maintain healthy soils and manage water efficiently, thereby maintaining the resilience of agroecosystem functions.
- Integrated production systems, which use some outputs (e.g., by-products) and services of one production component as inputs to another within the farm unit (and which may include for example agroforestry, integrated crop-livestock, rice-fish, and food-energy systems), can contribute to resilience by increasing farmers' self-sufficiency in the face of climate-related interruptions to input supply chains, as well as diversifying their on-farm livelihood support options.
- Water management for CSA may include for example on-farm water storage and water harvesting, groundwater development, modernisation of irrigation infrastructure, development of climate change-resilient crops, dam construction and improved reservoir capacity, wetland restoration and the climate proofing of irrigation and drainage infrastructure. Investments in irrigation (expansion or efficiency improvements) will at all times be subject to catchment level water accounting and governance frameworks to avoid unintentional impacts on overall water withdrawal and equity of distribution.
- Sustainable soil and land management for CSA may focus on measures for the control of soil erosion, given potential increases in erosive pressures from rain and wind under conditions of climate change; and the maintenance of soil organic carbon to promote soil health, resilience and water retention capacity.
- Support to the insertion of farmers into green value chains that are resilient to potential disruption from climate change impacts, and offer outlets for the products of CSA.

20. In a study on climate change adaptation planning at the local level, Chhetri *et al.* (2017)^[23] showed that some of the preferred technologies by local farmers in the study areas in Rajasthan, India, are crop insurance, weather-based crop agro-advisories, rainwater harvesting, site-specific integrated nutrient management, contingent crop planning and laser land levelling. Other suggested adaptation measures, specifically for rice, include the development of rice cultivars that are tolerant to stresses such as drought and submergence; building embankments to protect rice farms from floods; Alternate Wetting and Drying (AWD), which is shown to generate multiple benefits related to reducing water use (adaptation where water is scarce, subject to catchment level water accounting and governance), methane emission reduction (mitigation), and increasing productivity and contributing to food security.^[24]

21. Cambodia's updated NDC includes adaptation actions such as the development of rice crops for increased production, improved quality and safety; harvesting and post harvesting technique and agrobusiness enhancement; as well as improvement of support services and capacity building to crop production resilient to climate change.^[25] Viet Nam's updated NDC includes measures such as replacing long-duration rice varieties with short-duration ones, increasing areas with mid-season water drainage and alternating wet and dry irrigation techniques, and increasing areas with integrated crop management (ICM) or areas with the 'Three Reductions, Three Gains (3R3G)'^[26] and the 'One Must Do, Five Reductions (1M5R)'^[27].^[28]

22. Furthermore, a report by Earth Security Group (2019) points out that promoting investment in the milling sector and replacing obsolete processing units could significantly reduce postharvest losses, which are frequently as high as 30%. In Cambodia, upgrading the processing sector led to a rapid rise in production and exports of milled rice between 2011 and 2015.^[29]

23. Finally, access to credit and services, in particular for women and vulnerable social groups, along with secure land tenure, are important elements in strengthening resilience of smallholder farmers. Ensuring that financing for sustainable and climate-resilient agriculture reaches rural communities is fundamental to a just rural transition that addresses inequalities, transforms the food system to work for people, nature and the climate, and ensures inclusiveness and participation.^[30]

Table 1: Climate hazards, their impacts on rice production and livelihoods, and related adaptation options that may be supported through the project

Climate Hazards	Impacts on rice production / livelihoods	Adaptation Option	Related SRP Theme/ Performance Indicator
1. Increase in frequency and extremity of flood events	Crop losses	Flood tolerant varieties	Pre-planting, pure seed quality; Productivity/ grain yield
		Climate proofing of irrigation and drainage infrastructure	Water use
		Wetland restoration	Water use
	Harvest and post-harvest losses, impacts across supply chain	Improvements in storage, climate-resilient infrastructure, processing capacity	Harvest and post-harvest
2. Increased periods of drought	Reduced yields, crop failure	Drought-tolerant or short-duration rice varieties	Pre-planting, pure seed quality; Productivity/ grain yield

Climate Hazards	Impacts on rice production / livelihoods	Adaptation Option	Related SRP Theme/ Performance Indicator
		On-farm water storage and water harvesting, groundwater development, modernisation of irrigation infrastructure, dam construction and improved reservoir capacity accompanied by improved water management, catchment-level water accounting	Water use
		Timing of harvest	Harvest and post-harvest
3. Increased temperatures	Reduced yields, crop failure	Promote diversified crop production, including crop substitution	Farm management; Productivity/grain yield
		Heat-tolerant rice varieties	Pre-planting, pure seed quality
4. Sea level rise, increased salinity levels	Reduced yields, crop failure	Saline-tolerant rice varieties or other non-rice crops	Pre-planting, pure seed quality; Productivity/ grain yield
		Increased preparedness, access to weather forecasts	Pre-planting, farm management
5. Combination of all the above climate risks/hazards	Combination of all the above climate change impacts	Integrated production systems	Farm management, nutrient management; Productivity/grain yield
		Conservation agriculture, climate-smart agriculture, organic fertilizer use	Nutrient management
		Integrated pest management	Integrated pest management, health and safety
		Use of quality seeds and planting materials	Pre-planting; Productivity/grain yield
		Sustainable soil and land management to control soil erosion	Nutrient management
		Laser levelling and other Good Agricultural Practices	Pre-planting
		Diversification away from rice where rice farming becomes limited	Farm management

Climate Hazards	Impacts on rice production / livelihoods	Adaptation Option	Related SRP Theme/ Performance Indicator
		Increased access to credit, in particular for women and youth	Access to capital
		Insurance against crop losses	Access to capital
		Support the insertion of farmers into green value chains	Farm management
		Empowerment and enhance capacities of women and youth	Youth engagement; Women empowerment
		Sustainable mechanization to improve production and reduce drudgery, in particular for women	Harvest and post-harvest; Women empowerment
		Strengthen farmer organization and capacities to enhance adaptive capacity	Farm management, labor rights
		Strengthen access to services, including weather advisories, in particular for women and vulnerable groups	Women empowerment

Environmental impacts

24. In addition to being vulnerable to climate change impacts, rice production is also having significant impact on the environment. As explained above, rice uses 40% of all irrigation **water** globally. Furthermore, the overuse of **agrochemicals** leads to pollution of land and waterways as well as greenhouse gas emissions (without necessarily improving farmers' livelihoods even in the short term: in Cambodia, the detection of pesticide residue levels in excess of phytosanitary standards required by certain markets such as USA and Canada has resulted in excess production remaining unsold).^[31]

25. Flooded rice production systems are a major source of emissions of methane (CH₄): 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 CH₄ 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 80 times more potent as a greenhouse gas (GHG) than CO₂ over a 20 year accounting period. In the 'rice bowl' region of Southeast Asia, rice accounts for 25-33% of **methane emissions**.^[32] Furthermore, carbon emissions also result from the in-field burning of rice straw and improper management of residues such as rice straw and husks.^[33] Finally, adopting shorter-duration, high-yield varieties will help to reduce emissions per unit of production, and will potentially enable farmers to benefit from future carbon credits for GHG mitigation.^[34]

Mitigation co-benefits

26. Many of the above-mentioned adaptation options also contribute to GHG mitigation. Options for mitigating greenhouse gas (GHG) emissions in rice landscapes include (i) integrated nutrient management to reduce fertilizer-related emissions; (ii) Alternate Wetting and Drying (AWD) to reduce methane emissions from rice paddies; (iii) sustainable rice straw management to reduce emissions from agricultural burning; (iv) improved soil and landscape management to sequester carbon in agroecosystems; (v) use of renewable energies to reduce CO₂ emissions along the value chains (including, among others, the use of rice husks as biofuel); and (vi) reducing emissions from land use change associated with unsustainable crop production in the broader landscape.^{[35],[36]}

c. Focus countries context

27. Rice-producing countries across Asia are considered highly vulnerable to the impacts of climate change. Bangladesh ranks 7th, Cambodia 14th, and Viet Nam 13th on the Global Climate Risk Index 2000 ? 2019.^[37]

28. Bangladesh is located in the tropics in South Asia and has an area of about 147,570 sq. km. The country consists of low and flat land, with the exception of a small proportion of hilly regions in the north-east and the south-east and some areas of highlands in the north and north-west. Floodplains occupy about 80% of the country. Bangladesh displays a tropical monsoon climate characterized by heavy summer rainfall and high summer temperatures. The reason for these climatic conditions is Bangladesh's geographic location; the Himalayan mountain range acts as a barrier to moisture-laden monsoon winds in the summer season which cause intense rainfall, and helps protect the country from extreme cold wind blowing towards it from the north. Hilly terrains in the eastern parts of the country cause the country to receive huge amounts of water as surface runoff during the monsoon season from June to September.^[1]

[1]

https://unfccc.int/sites/default/files/resource/TNC%20Report%20%28Low%20Resolution%29%2003_01_2019.pdf

Climate change is expected to impact a range of sectors, including agriculture. Yields of rice (the predominant crop) are expected to drop, with direct impact on food security. Changes will also occur in forest ecosystems, including the Sundarbans (whose mangrove forests play an important buffer role against storms and sea level rise), with a decline in valuable tree species. Extreme events will affect both rural and urban infrastructure. Climate change is expected to directly affect livelihoods and worsen the economy and poverty rates.^[39]

29. In Cambodia, under future climate conditions (2025 and 2050), most of the country's agricultural areas will be exposed to higher drought risks. The growing period for most agricultural areas will be less than five months (between two and three months).^[40] Agriculture, representing 26.5% of GDP in 2015 and 20.8% in 2019 according to the National Institute of Statistics, is highly dependent on rainfall and on the annual flooding/recession of the Tonle Sap Great Lake. Rural communities are highly dependent on water resources for agricultural production. Sustainable irrigation systems and sound freshwater management are critical to build the resilience of the country.^[41]

30. In Viet Nam, likely impacts of climate change on agricultural production include:^[43] (i) For rainfed (seasonal) rice, yields are likely to decrease as a net impact of changes in rainfall, evapotranspiration, temperature and CO₂. (ii) 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 than estimated flow regimes in mid-headwaters (e.g., in Tan Chau, Tay Ninh Province), 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.

d. COVID-19 impacts

31. The impact of the COVID-19 pandemic on food systems has exposed the vulnerabilities of supply chains throughout the world. In the Asia region, the slowing global economy has caused widespread job losses, falling incomes, and reduced remittances. The ongoing impacts of the COVID-19 pandemic and related restrictions are worsening the vulnerability of poor communities and has pushed more people into poverty. A recent regional review of socioeconomic, agrifood and nutrition impacts of the COVID-19 pandemic confirmed that the pandemic has exacerbated loss of income and livelihoods for vulnerable families and their children and that the negative impacts of the pandemic have affected women disproportionately.^[44] Furthermore, the COVID-19 pandemic related impacts have exacerbated the population's vulnerabilities, and this will stress household resilience as poverty is projected to increase. Despite the global economic downturn, agricultural production (including rice) has been relatively resilient. However, supply chains that ensure the flow from producers to consumers have been disrupted by movement restrictions.^[45] The pandemic resulted in disruptions across the food system due to shortages in agricultural labour, limited access to farm inputs due to transport disruptions, declining food processing capacity, disruptions to logistics and trade, and reduced food consumption due to fewer face to face social and economic activities.^[46] Most governments in the region have responded with a range of social protection measures. These include cash transfers and unemployment benefits, provision of food in kind or through vouchers, wage subsidies, and waiver or postponement of utility bills. The proposed project presents an opportunity to directly contribute to a climate-resilient recovery to the COVID-19 pandemic through its investments in capacity and resilience building. By supporting access to financing for sustainable, climate-resilient investments and livelihoods and by strengthening farmer organizations and small and medium enterprises (SMEs), the project is aligned with governments' efforts to invest in COVID-19 recovery.

e. Root causes and barriers

32. There is significant potential across Asia to adapt to the above-mentioned climate changes and to sustainably increase rice production, thereby contributing to the resilience of rice farmers' livelihoods and of global food supply. It is estimated that facilitating farmers' access to affordable, higher-quality inputs such as seeds, supporting mechanised harvesting and drying processes, facilitating access to environmentally sound adaptation technologies such as precision irrigation could not only increase resilience, but also raise yields by nearly 400 kg/hectare, raise farmers' profits, and reduce methane emissions from the sector by 70%.^[47] However, smallholder farmers face several challenges that hinder the adoption of adaptation measures and technologies.

33. **Farming practices are not always adapted to climate change:** farmers grow a limited number of crops and varieties, which are not always adapted to the changing climate, and hence they face higher risks of crop failure; they lack integrated water management and soil and nutrient management practices, and increasingly use agrochemicals to compensate for yield loss and combat pests and diseases, making soils, water and ecosystems even more vulnerable to climate change. At the same time, they typically face difficulties in securing high-quality, affordable inputs and services needed to enable them to switch to climate resilient practices (e.g., resilient seed varieties, organic fertilizers, irrigation, machinery, weather/climate information, technical support).

34. Farmers also face weaknesses in value chain infrastructure (value chains may be vulnerable to interruption by climate change impacts, and may fail to offer favourable conditions for the adaptation measures outlined above). **There is limited investment in resilient supply chain infrastructure.** Transport infrastructure is often inadequate and poorly maintained, and vulnerable to damage from climate change: this drives up both the cost of imports and the cost of transporting produce to market (poor road infrastructure also contributes to up to a tenth of rice being lost during transportation due to contamination and spillage^[48]); storage facilities and irrigation systems are also inadequate and vulnerable to climate change impact.^[49]

35. Underlying both of these factors are **farmers' difficulties in accessing reliable and appropriate finance** that is tailored to their needs and the specificities of CSA. Smallholders often lack assets that can be used as collateral for loans: without organized and collateralizable assets or guaranteed income, they cannot easily absorb the costs and risks of adopting new practices and technologies, and diversify their livelihood sources for greater resilience.^[50] Farmers, as well as local companies engaged in the value chains have limited access to capital. This 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.^[51] **Land tenure insecurity** is another limiting factor, especially among women and other vulnerable populations. Farmers with insecure land tenure are less likely to invest in productive farm assets and technologies that would increase resilience and yields.^[52]

Barriers

36. This project will focus specifically on addressing the barriers that limit access to the reliable financing needed to make rice landscapes more resilient to the effects of climate change, as set out below:

Barrier 1: Absence of integrated financing mechanism that is able to leverage public and private investment in climate-resilient rice (addressed by Component 1)

37. There is currently no integrated financing mechanism addressing the specific challenges (and opportunities) that rice landscapes and value chains present. Thus, there is limited investment and limited engagement of local private sector, banks and financial institutions in investing in climate-resilient rice. Due to the high-risk nature of rice production and the upfront investment needed to support a transition towards climate-resilient rice, concessionary financing, combined with technical assistance, is needed to leverage public and private investment.

38. Rice has been a priority for many governments, bilateral and multilateral funders. However, it has largely been challenging to finance due to (1) a size mismatch/limited aggregation: investments are either very large (e.g., irrigation) or very small; (2) fragmented, loose value chains and dominance of informal domestic markets; and (3) relatively low margins. Transaction costs for financial services are high, given that most of the world's rice is produced in fragmented, low-productivity, high-risk value chains by smallholder producers who lack assets, land tenure security, and access to finance and to markets.^[53] Additionally, financial inclusion is weak, i.e., opportunities for certain vulnerable groups to access financial services are often limited, such as for women and the rural poor.

39. Some of the identified funding gaps in sustainable and resilient rice include: (1) Long-term: Irrigation infrastructure, milling and storage capacity, post-harvest facilities, research and development (R&D); and (2) Short-term: Input finance (fertilizers, crop protection, seeds), crop finance, mechanization services, export / trade finance, and farmer (household) finance.^[54] All of these investments would contribute to increasing resilience in some form, such as by improving water availability and management, reducing post-harvest losses and increasing value chain resilience, improving access to high-quality, climate-resilient seeds and other inputs, access to financing for farmers and farmer groups, and sustainable mechanization to improve production and reduce drudgery, in particular for women.

40. De-risking is essential to financing a transformation in the rice sector towards climate resilience, given relatively low margins and very high risks. However, working capital needs in rice supply chains are small relative to the deal size requirements and timeframes of development-oriented funders such as Development Finance Institutions (DFIs), impact funds, and international banks. In general, DFIs, including providers of concessionary capital, are not well-positioned to efficiently engage funding volumes less than USD 10 million. Many commercial financial investors have limits on the percentage that they can represent in a transaction or investment structure (e.g., minimum USD 10 million commitment representing no more than 20% of the overall funding volume). If sustainable rice finance projects are to engage more commercial investors and DFIs, including multilateral funding

pools such as the Green Climate Fund, total volume should be at least a few hundred million USD. However, this must be aligned with on-the-ground funding needs, which are typically in the hundreds of thousands to tens of millions. Given this size mismatch, an appropriate approach should consider *multiple countries and allow for engagement at different points in the value chain* and with a variety of counterparties.^[55]

41. A report on Promoting Private Sector Contributions to the Climate Change Response in Cambodia (2016) estimated that USD 185 million was invested by private actors in climate-related projects over the period 2009-2011. However, the majority of these investments have so far been mitigation related. The identification of adaptation measures supported by the private sector remains a challenge.^[56] Building a strong pipeline of adaptation investments with identified counterparts and value chain partners is needed to increase private sector investment in adaptation in rice landscapes. This needs to be accompanied by technical assistance to ensure that the investments are sound, adapted to the local context and contribute to adaptation at the landscape level.

42. Related to this, a report by Earth Security Group (2019) noted the following barriers to scaling private sector finance for agriculture, including the high-risk profile of the agriculture sector, the seasonal nature of farming, the specialised knowledge required to assess investment opportunities, and the low appetite to lend to smallholder farmers due to a lack of collateral and established credit histories of smallholder farmers. Furthermore, the report identified the following barriers to financing of sustainable rice:

- ? Barrier 1: The **absence of a financial infrastructure** to service millions of rice smallholders who lack access to services.
- ? Barrier 2: The **upfront investment needed** for companies, suppliers and farmers to switch to climate-smart production methods.
- ? Barrier 3: The **lack of public financing for governments to attract private sector investment** through blended finance instruments.^[1]

^[1] [Earth Security Group \(2019\)](#).

Barrier 2: Limited financial and technical capacities among local counterparts and beneficiaries to invest effectively in climate resilience (*addressed by Component 2*)

43. The lack of tailored financial products in climate-resilient rice is at least in part due to the **lack of agricultural expertise and awareness of adaptation options within financial institutions**.^[57] A study by the National Council for Sustainable Development (NCS) in Cambodia highlighted several new business opportunities for the private sector to invest in climate-smart agriculture practices, including ICT service provision (such as remote sensing information on yields) to climate proofing inputs (resilient seeds, organic fertilizer), risk coverage services (crop insurance, micro-credit through cooperatives), and sustainable farming technologies (e.g., climate-smart agriculture, sustainable mechanization).^[58] However, there is limited knowledge and capacities among local financing institutions and counterparts to effectively invest in such practices. Although various value chain actors are aware of climatic trends, they are generally unaware of specific actions, investments, or approaches that would efficiently contribute to improved resilience. The NCS study notes that Cambodian banks are generally unaware of the challenges and opportunities associated with a low-carbon and climate-resilient development. Similar barriers exist in other rice-growing countries of Asia.^[59]

44. Transformation of rice landscapes requires harnessing finance to an essential set of local capacities and incentives. Local political dynamics, land tenure, subsidies, and other structural incentives will heavily influence the potential for sustainable rice landscapes and value chains. Due diligence challenges, especially in very low-income countries, requires an expensive capacity development process that addresses endemic challenges, cultivates projects, and builds up viable, bankable companies.^[60]

45. Additionally, there are **limited capacities among smallholder farmers** for accessing funds and markets. This is in part due to the high fragmentation of smallholder production and value chains. The number of smallholder farms in rice globally is approximately 144 million, far higher than for any other crop.^[61] This high fragmentation makes the large-scale adoption of measures to enhance climate resilience and improve agronomic practices more difficult: smallholders are price-takers with low bargaining power, limited access to finance, services, infrastructure and climate-adaptive technologies such as adequate drying equipment and post-harvest storage facilities.^[62] The low rate of farmer organization and the limited capacity of existing farmer groups/associations further contributes to this.^[63] Moreover, there is limited coordination between actors across the value chain.

46. Technical assistance is needed to help strengthen farmer organizations and enhance capacities around implementation of climate-resilient practices, access to financing, as well as the use of standards such as SRP. Adaptation in agriculture is highly context-specific; technical assistance, thus, needs to be adapted to the specific landscape. In many rice production landscapes and upstream value chains, local capacity (e.g., cooperatives, agri-SMEs, off-takers) needs to be cultivated so that sustainable rice finance projects have effective implementers and bankable counterparties. De-risking strategies (e.g., guarantees by governments or global donors) need to be paired with strong upstream value propositions that deliver increased productivity and profitability. Smallholder rice growers need multiple sources of support (e.g., access to inputs and services; secure land tenure; technical advising; market linkages; financial inclusion) to strengthen their position and participation within rice value chains.^[64]

47. In Bangladesh, for example, in its 2019-20 Agricultural and Rural Credit Policy, the Bangladesh Bank instructed commercial banks to focus on climate-stressed areas such as waterlogging, salinity, and drought prone areas. However, consultations with relevant stakeholders during the GEF-7 LDCF project development revealed that while the Bangladesh Bank has incorporated climate finance in its policies, it is **not fully mainstreamed nor is monitored systematically**. One challenge is that, typically, **commercial banks have limited technical knowledge on climate resilient options** (and costs associated therein) and their risk profile, both at the household and aggregator (producer group, entrepreneurs and MSMEs) levels. The micro, small, and medium enterprises (MSMEs) finance gap is around 20% of the country's GDP.^{[65],[66]}

48. In Cambodia, there is currently a limited volume and selection of financial products to support agricultural investments, due largely to a **lack of knowledge in the financial sector** about how to identify, assess, and price risk factors in the agricultural sector. Although different technologies and practices in agricultural value chains have very different risk-reward profiles, e.g., related to climate resilience, **lenders typically assume and price in uniformly high risk**, differentiating instead on other factors (e.g., borrower characteristics, type of securitization). Therefore, lenders typically limit their exposure to the agricultural sector and charge high interest rates, both of which limit support especially to smallholders and small and medium enterprises (SMEs). This means that the financial sector currently poses an unrealized potential to support technologies and practices with desirable risk-reward profiles in the agricultural sector. Given that climatic factors pose the single greatest risk to agricultural production, borrowers and lenders would benefit from financial products and terms that reflect the actual, stronger risk-reward profiles of technologies and practices that limit climatic risks.^[67]

Barrier 3: Lack of framework to monitor and share knowledge on the impacts of a climate-resilient rice financing mechanism (addressed by Component 3)

49. While detailed indicator frameworks have been developed to measure and monitor adaptation, there is a lack of specific indicators and monitoring framework to measure the impacts of a financing mechanism that invests in sustainable and climate-resilient rice. The Sustainable Rice Platform (SRP) and the Climate Smart Agriculture (CSA) framework^[68] provide a good basis upon which to build. However, this needs to be adapted to the needs of an integrated and blended financing mechanism in line with donors' and public and private investors' requirements.

2) Baseline scenario and any associated baseline projects

50. The baseline scenario and associated baseline projects are described below. In the baseline, governments have established relevant policies, plans and programmes in support of climate change adaptation in the agriculture sector. Several investments by government, private sector, international development partners are promoting climate-resilient and sustainable approaches in agriculture (including rice) landscapes in the target countries and in the region. However, there is still a gap in targeted financing for adaptation in rice landscapes and value chains that would catalyse and accelerate investments in climate resilience. The project will work closely with these initiatives and stakeholders to build on their achievements and leverage or amplify their investments.

a. Government policies and programmes

Box 1: Bangladesh policies and programmes

51. The Government of Bangladesh has demonstrated its commitment to undertake both adaptation and mitigation efforts as part of its plan for sustainable development. Every year the Government channels resources for significant investment in projects/programs for ensuring climate resilience. It currently spends US\$1 billion a year, around 6 to 7 per cent of its annual budget, on climate change adaptation (CCA). However, the World Bank estimates that the country would need US\$5.7 billion as adaptation finance by 2050, which is more than 5 times higher than the current expenditure for CCA.^[69]

52. In recognition of the access to finance challenges, Bangladesh has set lending norms and targets for its agriculture and rural sector, and these targets have been largely met or exceeded in recent years.^[70] In 2020, **Bangladesh Bank** (the country's central bank) formulated a Sustainable Finance Policy for Banks and Financial Institutions. The policy is intended to guide banks and financial institutions (FIs) in their participation and contribution in the implementation of the NDC and SDGs. From January 2016 onwards the minimum target of direct green finance was set at 5% of the total funded loan disbursement/investment for all banks and FIs.^[71] In its Agricultural and Rural Credit Policy Program, Bangladesh Bank sets agricultural credit targets for each fiscal year, and has recently added a focus on climate-stressed areas.^[72]

53. Bangladesh submitted the National Adaptation Programme of Action (NAPA) in 2005 (updated in 2009). In 2009, the country formulated the Bangladesh Climate Change Strategy and Action Plan (BCCSAP).^[73] The formulation of the National Adaptation Plan (NAP) Process was initiated in 2019.^[74]

54. To finance the implementation of projects under the BCCSAP, Bangladesh recently established two innovative funds: the **Bangladesh Climate Change Trust Fund (BCCTF)** from the government's own budget and the **Bangladesh Climate Change Resilient Fund (BCCRF)** with the support of development partners.^[75] Under the BCCTF, a total of 282 projects of over USD 200 million have been approved so far, such as for building cyclone resilient houses, afforestation, excavation/re-excavation of canals, introduction and dissemination of stress tolerant crop varieties and seeds, construction of embankments and river bank protective work, waste management and drainage infrastructure, and installation of solar panels. Under the BCCRF, over USD 188 million in grant funds are channelled to millions of Bangladeshis to build their resilience to the effects of climate change.^[76]

55. In 2020 Bangladesh assumed the presidency of the 48-nation Climate Vulnerable Forum (CVF) and the Vulnerable Twenty (V20) Group of Finance Ministers. As a first CVF plan, the draft **Mujib Climate Prosperity Plan**, aims at mobilizing financing, primarily through international cooperation, for implementing climate resilience initiatives such as an expansion of locally-led adaptation, the establishment of carbon market regime, Bangladesh Delta Plan 2100 resilience bonds, climate-resilient and nature-based agricultural and fisheries development, climate resilient well-being programs and accelerated digital revolution, training and skills development.

Box 2: Cambodia policies and programmes

56. In 2006, Cambodia developed its National Adaptation Programme of Action to Climate Change (NAPA).[77] The Cambodia Climate Change Strategic Plan (CCCSP) 2014-2023 and sectoral Climate Change Action Plans (CCAPs) were developed in 2014. The National Adaptation Plan Process in Cambodia was published in 2017. The plan includes a chapter on climate financing and the financial gap for adaptation.[78]

57. Also in 2017, Cambodia formulated a **National Adaptation Plan Financing Framework and Implementation Plan**.^[79] The plan identified a financing gap for the Ministry of Agriculture, Forestry and Fisheries CCAP Actions of USD 187.55 million or 99.8% of the total required budget. Actions include, among others:

- ? Promoting post-harvest technology for cereal crop and tuber crop, conducting research and transferring appropriate post-harvest technology.
- ? Promoting research work on appropriate climate smart agriculture technology/technique to adapt and mitigate climate change.
- ? Developing crop varieties suitable to the agroecological zones (AEZ) resilient to climate change.
- ? Strengthening capacity of agricultural and agro industry development entrepreneur and the agricultural cooperative in low carbon production
- ? Promoting marginalized groups and women participation to climate change adaptation and mitigation strategy.^{[80]•[81]}

58. In 2015, the **Cambodian Agriculture Cooperative Insurance Company (CACIC)** announced the start of an agriculture micro-insurance service to help rice farmers better respond to climate change. Farmers have to pay an insurance fee (approx. USD 10/ha/season), and in return, they receive consultation on climate resilient farming methods and an insurance payout when their crop is damaged by floods or droughts. The initiative is funded by the Netherlands? Achmea private foundation.^[82]

59. In the agriculture sector, **carbon finance** is mainly used in projects including rice miller using rice husk gasification or cogeneration as an alternative to diesel or wood fuel or charcoal, or biogas at industrial scale reducing methane emissions from pig manure. Most of the projects were developed under the Clean Development Mechanism (CDM) and were started before the CDM crisis (price dropped from EUR 15 /tCO₂e in 2011 to EUR 0.5/tCO₂e in 2014). The reduced GHG emissions remain substantial, while the generated income and attractiveness for investors remain modest in the case of CDM.^[83]

60. The Mekong Sustainable Finance Working Group and the Micro-Finance Institutions (MFI) Client Protection Principle are assisting Cambodian financial institutions in developing environmental and climate screening criteria and tools to guide their lending activities. The Association of Banks in Cambodia (ABC) has recently launched the **Cambodian Sustainable Finance Initiative (CSFI)**, an effort to develop sustainable finance principles and announced plans to work towards integrating environmental and social safeguards and lending standards into their business decisions. [84]

Box 3: Viet Nam policies and programmes

61. Viet Nam's policies related to climate change adaptation include, among others:
- ? Resolution on active response to climate change, strengthening natural resources management and environmental protection (2013).
 - ? Target program to respond to climate change and Green Growth for the period of 2016-2020.
 - ? Supporting Program to respond to climate change (SPR-CC) for the period of 2016-2020.
 - ? Resolution on Sustainable Development of the Mekong River delta adapting to climate change.
 - ? Provinces and cities have updated their action plans to respond to climate change as well as identify and carry out their plans for PA implementation and the national action plan on green growth for the period of 2016-2020.^[85]
 - ? The Mekong Delta Plan (2013) also refers to climate change adaptation and resilience.^[86]
62. **MARD has developed an action plan** in response to climate change that includes 54 tasks, requiring a total of VND 402 billion in funding. So far, only 21 tasks have been implemented with a total funding of VND 47 billion. One of the adaptation measures employed by the agricultural sector is the creation and use of hybrid varieties of crops that have the potential to adapt to changing climatic conditions.^[87] Overall, only 30-35% of the action programmes and plans identified in the Third National Communication can be funded from Government budgets (at the central and local level) while the remainder will need to be provided via other funding avenues, such as overseas development assistance or the private sector. The country encourages private sector investments in adaptation.^[88]
63. The **National Adaptation Plan (NAP) process** is currently ongoing (started in 2021). Under the FAO/UNDP Integrating Agriculture in National Adaptation Plans (NAP-Ag) project, an M&E system and indicators for adaptation in the agriculture sectors were piloted in five provinces, namely Lao Cai, Nam Dinh, Quang Binh, Kon Tum and Soc Trang. A synthesis report that provides recommendations on the data collection and analysis of adaptation indicators was released. The guidelines for the implementation of the M&E system for the NAP for the agriculture sectors and its integration into the current M&E system of MARD were also finalized.^[89]
64. Additionally, the International Rice Research Institute (IRRI), the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and the Climate and Clean Air Coalition (CCAC) have supported the Vietnam Government in assessing mitigation options and in developing a framework for Monitoring, Reporting and Verification (MRV) for low-carbon rice production.^[90]

b. Private sector / civil society

Sustainable Rice Platform (SRP)

65. The Sustainable Rice Platform (SRP) is a global multi-stakeholder alliance of over 100 institutional members from public, private, research, civil society and the financial sector. SRP works with partners to transform the global rice sector by improving smallholder livelihoods, reducing the social, environmental and climate footprint of rice production; and by offering the global rice market an assured supply of sustainably produced rice. SRP aims to reach 10 million rice farmers by 2030 and have them adopt good practices in compliance with the SRP Standard. Since 2011, the Sustainable Rice Platform (SRP) has developed sustainable production standards, performance indicators, incentive mechanisms, and outreach initiatives to boost wide-scale adoption of sustainable best practices throughout rice value chains. Over the past decade, registered SRP projects have impacted over 400,000 farmers in Asia, Africa, Europe, and the Americas.^[91] The SRP Standard for Sustainable Rice Cultivation is considered an important mechanism to leverage financing for sustainable rice. SRP provides an agreed standard and metrics based on which financing mechanisms can be developed. The Cambodia National Chapter of SRP is hosted by the General Directorate of Agriculture, while a multi-stakeholder working group is active in Viet Nam, and national interpretation guidelines are being developed for both countries.^[92] SRP delivers training courses through selected institutions, known as

Authorized Training Providers, to build a cadre of persons qualified to conduct farmer outreach, training, and verification activities in support of SRP objectives (the SRP Authorized Trainers). These individuals help to further scale capacity building on-the-ground.^[93] *The SRP will play a key role in the financial mechanism to be established under the proposed project, in particular by providing technical assistance and a recognized validation framework comprising the SRP Standard and Performance Indicators, that can support a transformation to sustainable, climate-resilient rice farming practices and landscapes.*

Sustainable Rice Landscapes Initiative (SRLI)

66. Under the umbrella of the SRP, UN Environment Programme, FAO, GIZ (German Agency for International Cooperation), World Business Council for Sustainable Development (WBCSD) and other partners developed the **Sustainable Rice Landscapes Initiative (SRLI)**, an initiative of which the Cambodia GEF-7 LDCF and Vietnam GEF-7 Food Systems, Land Use and Restoration (FOLUR) projects are part. 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. SRLI has established a strong organizational development plan to accelerate landscape solutions for rice, focused on global advocacy, financing, and private sector engagement. *The proposed project will directly collaborate with the projects developed under the SRLI umbrella and augment their impact by enhancing access to financing for sustainable rice.*

67. In 2021, the SRLI organized several **roundtable discussions** with financial institutions and rice value chain actors in India, Pakistan, Thailand, Viet Nam, and West African countries. The roundtable organized in Viet Nam, for example, concluded that finance must be combined with technical assistance at the farm level (such as for reducing chemical use) and that climate change is an increasingly important consideration amongst all actors in the rice value chain. Further, the roundtable participants noted that commercial banks require public-private partnerships for financing to enable their initial investments to reach the de-risking requirements imposed by central banks. Blended finance is important to help overcome initial risk barriers that prevent the crowding in of private capital.^[94] The roundtable discussions provided useful insights for the design of the proposed project.

World Business Council for Sustainable Development (WBCSD)

68. WBCSD is a global, CEO-led organization of over 200 leading businesses, supporting the achievement of the 2030 Sustainable Development Goals. WBCSD has a strong background on systems transformation, with a food and agriculture system focus, particularly for achieving the joint priorities of climate (net zero), nature (nature positive) and tackling inequality. It is proposed that WBCSD will be a main executing partner under the proposed project, to be further consulted with stakeholders during the project preparation phase. Also, the project will build on the extensive network of WBCSD, in particular its members engaged in the rice value chain, including multi-national banks, agri-business off-takers, input companies and asset owners. Among others, WBCSD is implementing the Just Rural Transition Initiative funded by UK Government targeting food systems transformation, smallholders and rice landscapes, with the acceleration of regional solutions for SRLI being a key outcome area for the initiative. Additionally, WBCSD is also a partner under the GEF-7 FOLUR Global Coordination Project (see *Section 6.b Coordination with other projects*).

Other private sector initiatives in the target countries

69. Other relevant private sector initiatives engaged in rice value chains in the target countries are summarized below. The project will build on the experiences and lessons learned of these initiatives and will consider these private sector entities as potential counterparts in the financial mechanism.

70. In 2016, under the Feed the Future Bangladesh Rice Value Chain (RVC) project funded by USAID and implemented by IRRI, the International Finance Investment and Commerce Bank Limited (IFIC Bank) with support from mSTAR/Bangladesh piloted an agri-credit facility for farmers using a mobile financial services platform.^[95] IFIC Bank also provides loans to small and medium enterprises (SMEs) engaged in rice milling and other agribusinesses.^[96]

71. In Cambodia, several examples of contract farming models in the rice value chain exist. **Angkor Kasekam** rice miller was one of the first to introduce contract farming with a minimum price based on market. The company is now working with 50,000 farmers in 4 provinces (Kandal, Kampong Speu, Takeo, Kampot). **Golden Rice** miller is working with Agence Française de Développement (AFD) on contract farming. The scheme is looking at farm mechanization and seeds-nursery. The company currently supplies high quality paddy to 50,000 farmers that produce around 100,000 tons of rice/year. **Amru Rice** (largest rice miller and exporter in 2015) and Baitang, both use contract farming and farmers cooperation to ensure their supply chain grows fair and organic rice sustainably.[97] Amru Rice has adopted the SRP Standard to meet the requirements of international buyers and respond to global market trends of sourcing rice products in a more sustainable manner.[98] With support from the Global Agriculture and Food Security Program (GAFSP), IFC and other lenders, Amru Rice constructed a state-of-the-art rice mill, which will help the company increase its milling capacity and expand its farmer reach. Amru Rice plans to increase the number of contract farmers in its supply chain from 3,600 to some 15,000 smallholder farmers and provide targeted technical assistance with the aim of boosting farm yields.[99]

72. In parallel, commodity exporters in Cambodia have embarked on certification schemes that open the doors to a fast-growing market. End-buyers and commodities traders such as Mars, Marks and Spencer, Carrefour, Olam are investing in the sustainability of their supply chain, to increase resilience to climate risks and other hazards.[100] In 2018, **IFC and Mars Food** entered a partnership to develop the rice industry in Cambodia sustainably, along with local supplier **Battambang Rice Investment Co., Ltd (BRICO)**. [101] In 2017, Mars Food announced that all Uncle Ben's Basmati rice will be sourced from farmers who are working towards the SRP Standard for sustainable rice – the first in the global rice industry. Mars Food works with partner organizations including IFC, GIZ and Oxfam in nine countries across Asia, Europe and the USA to help farmers adopt sustainable practices.

73. WCS and Sansom Mlup Prey (SMP) have been supporting around 1,000 smallholders' farmers to produce and market Wildlife Friendly **IBIS Rice**, which results in a 20% price premium for farmers. IBIS Rice has been certified organic to US and EU standards since 2016. IBIS Rice farmers produced more than 435 tons of organically grown, jasmine rice during the 2013-2014 harvest season.[102] In 2020, the United States Agency for International Development (USAID), through its Green Invest Asia project, facilitated a financing agreement between Phnom Penh Commercial Bank (PPCBank) and IBIS Rice Conservation Co Ltd. (IBIS Rice) to increase wildlife-friendly organic rice sales. In addition, USAID Green Invest Asia supported the creation of a debt facility for the company's longer-term finance needs.[103]

74. In Viet Nam, IFC and IRRI, in partnership with the government of Canada, helped **Loc Troi Group (LTG)** (a leading provider of agricultural services and products in Viet Nam) adopt the SRP Standard. Strict requirements ensure the production of safe grains, protect the environment, and guard the health of farmers and consumers. LTG is the first agribusiness to apply sustainability standards in Viet Nam. To meet SRP's conditions, the 3,500 farmers in LTG's value chain must conform to 46 farming requirements in rice production in the Mekong Delta's seven provinces.[104] In 2017, the Vietnamese government set up the **Public-Private Partnerships Taskforce on Rice**, which is already running a number of pilot projects in the Mekong and Red River Deltas.[105]

75. Under the **Development of Sustainable and Inclusive Rice Value Chain for smallholder producers in Vietnam** programme, Rikolto[106] is working with large rice corporations and trading companies and the Dong Thap Department of Agriculture and Rural Development to link smallholder farmers to national and global value chains for sustainable rice products.

c. Donor-funded initiatives

Global Agriculture and Food Security Program (GAFSP)

76. The Global Agriculture and Food Security Program (GAFSP) was launched in response to the 2007-08 food price crisis to address a clear need for increased investment in agriculture and food security. The GAFSP is a USD 1.7 billion multilateral financing mechanism that supports resilient and

sustainable agriculture systems. It offers a range of public and private investment tools such as grants, technical assistance, concessional loans, blended finance, and advisory services across the entire value chain.^[107] In December 2021, the GAFSP announced USD 121 million in new grants for nine national governments and, for the first time, an additional USD 30 million for producer organizations based in 12 countries worldwide, including Bangladesh and Cambodia. This funding aims to strengthen sustainable, inclusive, and resilient food systems in the world's poorest countries, in response to rising food insecurity linked to COVID-19 and climate change.^[108]

77. Among others, GAFSP is funding the USD 2.48 million "Increasing Access to Finance for Farmers" Organizations in Bangladesh or **Missing Middle Initiative (MMI)** project (2018-2021), led by the Ministry of Agriculture with technical support from FAO. The goal of the MMI project is to strengthen 55 farmers organizations (FOs) and 10,000 farmers through capacity building on financial and organizational management, governance, and leadership/negotiation skills; market linkages with private sector (bulk buying of inputs and selling produce); access to finance (FOs as bank agents or being an FO member reduces credit risk); access to technology (safe vegetable production, improved varieties); and, establishment of collection points for vegetables, fruits, and milk with cleaning, sorting, grading, and packaging facilities.^[109] *The proposed project will coordinate closely with GAFSP and the MMI in order to learn from its experiences, align investments, and avoid duplication.*

USAID Green Invest Asia

78. USAID Green Invest Asia supports agriculture and forestry companies with business strategies, environmental assessments and advice to improve their sustainable commodity production and business practices, including preparing companies for investment and capital matchmaking. The initial focus of the program has been on rice, rubber, timber, coffee, coconut and cacao in Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Thailand and Viet Nam.^[110] *The proposed project will explore linkages with this program in relation to fostering investments in sustainable rice production.*

FAO initiatives

79. FAO's **Hand-in-Hand Initiative (HIHI)**^[111] aims to accelerate agricultural transformation and sustainable rural development through "matchmaking" between priority countries with greatest needs and funding sources; a geospatial platform to support informed targeting of investments; an innovation data lab; and a monitoring and evaluation dashboard. The HIHI approach has proven to be a useful model for coordinating integrated rapid response to COVID-19 impacts on food systems. Bangladesh is among the priority HIHI countries in Asia. *The proposed project will seek opportunities to build on data generated by the HIHI platform and coordinate with its investments in agricultural transformation.*

80. **RuralInvest** is a toolkit developed by FAO to help prepare and evaluate small- and medium-size agricultural and rural investment projects. The RuralInvest toolkit can be used by groups, organizations or individuals wishing to prepare an investment proposal or mobilize resources. Among others, the toolkit was used in Bangladesh under the Missing Middle Initiative (MMI) described above.^[112] *The proposed project will explore opportunities to use the RuralInvest toolkit under the financial mechanism to be established by the project.*

UN Environment Programme (UNEP) ? KPI Directory

81. UNEP's Climate Finance Unit, in collaboration with the UN Environment World Conservation Monitoring Centre (UNEP-WCMC) and in consultation with impact investors, banks and international organisations have been working to identify best practices, evidence, research, and metrics for standardizing and mainstreaming risk management and impact for sustainable land-use and deforestation-free commodity financing. The Land-use Financing ? Positive Impact Indicators Directory has been designed to help harmonise monitoring and reporting across a range of positive environmental and social (E&S) impact areas: biodiversity conservation, climate adaptation, and mitigation, forest protection, and sustainable livelihoods. A web platform is currently being created.^[113]

Other donor-funded initiatives

82. Other relevant donor-funded initiatives in the three target countries are summarized below. The proposed project will learn from the experiences of these initiatives, while ensuring coordination and exchange of knowledge with them.

Initiative	Linkages with the project
<p>1) In 2017, UN Environment Programme and Rabobank announced a global Forest Protection and Sustainable Agriculture partnership, with the aim to unlock at least USD 1 billion in finance towards deforestation-free, sustainable agriculture and land use. A fund was created to catalyse private financial resources for this initiative: the AGRI3 Fund.^[114] A GEF Non-Grant Instrument (NGI) project by Conservation International is currently under development to support the AGRI3 fund (‘A Forest Conservation and Sustainable Agriculture Fund for Developing Countries’, GEF project ID 10497). The AGRI3 Fund has a global scope and ambition, but with a focus on middle income (MICs) and lower income countries (LICs). In line with the strategy to create impact efficiently, the Fund will initially focus on Brazil, Indonesia and India; other jurisdictions will be considered contingent on the availability of eligible transactions. In the lead-up to the operationalization of the AGRI3 Fund, an Environmental and Social (E&S) impact framework including Key Performance Indicators (KPIs), and a pipeline of projects were developed.^[115] So far, 5 transactions have been finalised and closed (focused thus far on chili peppers, soy and beef/cattle). However, rice as a commodity is in principle eligible as well, and as such this fund could potentially play a role depending on the financial and E&S additionality of projects put forward (the core objective of the fund is that every project should at least improve rural livelihood and in addition either protect/restore forests and/or accelerate climate-smart agriculture).</p>	<p>The proposed project will build on the experiences of this project and will exchange to create synergies and avoid potential duplication with the investments of this fund. This will be done, in particular, through UN Environment Programme who is an SRLI partner.</p>
<p>2) The International Rice Research Institute (IRRI) is implementing several projects across the region upon which the proposed project can build. Among others, these include: (1) Transforming Agrifood Systems in South Asia, (2) Harnessing Digital Technologies for Timely Decision-Making across Food, Land, and Water Systems, (3) Sustainable Intensification of Mixed Farming Systems, (4) Securing the food systems of Asian Mega-Deltas for climate and livelihood resilience (AMD), (5) Adaptation Assessment for Investments in Rice-based Food Systems of Asian Mega Deltas, and (6) Agroecological transitions for building resilient and inclusive agricultural and food systems (TRANSITIONS).</p>	<p>The project aims to build on the outcomes of these projects, including the decision-support for adaptation options and the metrics for agroecological transition.</p>
<p>3) The Government of Bangladesh, in collaboration with partners, is currently developing an Agricultural Transformation Program (ATP) led by the Ministry of Agriculture (MoA) with support of Local Consultative Group on Agriculture, Food Security and Rural Development (co-led by FAO through the Hand in Hand Initiative). An initial commitment of USD 500 million has been made by the World Bank. The goal is the modernisation of Bangladesh agriculture sector through interventions that will include: promotion of export-oriented agricultural production, agro-processing, climate-resilient agriculture/agroecology and climate finance, digital transformation in agriculture, women and youth led agricultural leadership and entrepreneurship, private sector and supply chain improvements, and commodity diversification.</p>	<p>The proposed project will collaborate closely with the ATP and HIHI initiative during project preparation and implementation to identify synergies.</p>

<p>4) Since 2017, the Bangladesh Rice Research Institute (BRRI) jointly with the International Rice Research Institute (IRRI) implemented the project ‘Climate-smart practices and varieties for intensive rice-based systems in Bangladesh’, funded by the Asian Development Bank (ADB). The project aims to adopt climate-friendly technologies for sustainable farming of the crop in the country.[116]</p>	<p>The project will build on the knowledge generated by this project with regard to climate-smart rice-based farming systems.</p>
<p>5) Remote Sensing-based Information and Insurance for Crops in Emerging Economies (RIICE) is a Public-Private Partnership funded by the Swiss Development Cooperation, with Allianz, Sarmap company, GIZ, IRRI, with two objectives: 1. Increase the information on rice growth areas through remote sensing technology; 2. Provide access to insurance solutions for governments, agricultural intermediaries (cooperatives or rural banks) and individual farmers. The project is starting its second phase and will look at developing its insurance chapter in target countries including Cambodia.[117]</p>	<p>The project will explore synergies with this project in particular related to its insurance component and geospatial system.</p>
<p>6) In Viet Nam, the Green Innovation Centres initiative of GIZ will 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.</p>	<p>The project will build on the knowledge gained and lessons learned of this project in implementing the SRP Standard.</p>
<p>7) The GIZ-Better Rice Initiative Asia (BRIA) II/Market-oriented Smallholder Value Chains Project (MSVC) 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 Viet Nam from 2018 to 2022. The project aims to enable smallholder rice farmers to access sustainable Market Oriented Smallholder Value Chains, by using the SRP Standard to promote sustainable rice cultivation. Over 9,000 smallholder farmers have been trained so far in the three countries on sustainable rice production and access to sustainable value chain, as a results of which their income has increased by 20%.[118]</p>	<p>The project will build on the knowledge gained and lessons learned of this project in implementing the SRP Standard.</p>
<p>8) In Viet Nam also, 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 Reductions (1M5R)’ integrated technology packages in order to reduce production costs, improve farmer health, and protect the environment in irrigated rice production.</p>	<p>The project will build on the knowledge and lessons learned of this project in implementing sustainable, climate-smart rice production.</p>

Monitoring/indicator frameworks for adaptation

83. The following monitoring/indicator frameworks for adaptation in agriculture have been developed and will provide a basis for the indicator framework to be established for the financial mechanism (Table 2). These indicators will be considered when developing the Fund’s adaptation metrics under Component 3, alongside the SRP Standard described above. As explained above, the SRP Standard and its Performance Indicators provide robust and proven metrics based on which financing mechanisms can be developed. It also provides the basis for M&E at the farm level. The SRP Standard has three levels of verification:

- 1) **Assurance level 1:** Self-Assessment. First level does not involve annual fee, but farmers self-register in the SRP database. This level is well suited to be linked with financing mechanisms, in particular for resource-poor farmers who lack access to finance.

- 2) **Assurance level 2:** Second Party Verification (such as through Participatory Guarantee System (PGS), external SRP approved Verification Body linked to producers or producer groups).
- 3) **Assurance level 3:** Third Party Verification by approved SRP Verification Body.[119]

84. Additionally, UNEP's KPI Directory^[120] as well as other existing frameworks^[121] will also be taken into account when designing the projects E&S and impact monitoring and Key Performance Indicators.

Table 2: Relevant monitoring/indicator frameworks for climate change adaptation

Reference	Topic(s)	Level	Sector (intended users)
Tool for Agroecology Performance Evaluation (TAPE)[1]	Assesses agroecological conditions and transitions in ten core dimensions ^[2]	National and program/project level	Multi-sectoral (adaptation practitioners)
Tracking Adaptation in Agricultural Sectors: Climate Change Adaptation Indicators[3] (FAO, 2017)	Methods and indicators for tracking climate-change adaptation	National and sub-national	AFOLU (national decision-makers and MRV practitioners)
ASAP Taxonomy of Adaptation SMEs [4]	The Adaptation SME Accelerator Program (ASAP) aims to enhance the availability and uptake of climate adaptation solutions by identifying, engaging and empowering SMEs providing such solutions in developing countries	SMEs	Multi-sectoral
Monitoring and reporting toolkit of Pilot Program for Climate Resilience (PPCR)[5] (CIF, 2015)	Processes related to adaptation planning and mainstreaming	National and program/project level	Multi-sectoral (national policy-makers)
Index for risk assessment (INFORM) [6] (De Groeve et al., 2015)	Assessment of country resilience and ranking	National	Multi-sectoral (national decision-makers and international organizations)
Framework on making adaptation count[7] (Spearman and McGray, 2011)	Monitoring and evaluation of adaptation processes and outcomes	National and local	Multi-sectoral (adaptation practitioners)
Strengthening Monitoring and Evaluation of Climate Change Adaptation[8] (GEF STAP, 2017)	M&E challenges and frameworks	Program/project	Multi-sectoral (development agencies and financial institutions)
Climate Smart Agriculture (CSA) monitoring and evaluation framework[9]	CSA programme and project monitoring and evaluation framework; Examples of indicators	Program/project	Multi-sectoral (adaptation practitioners)

Reference	Topic(s)	Level	Sector (intended users)
CGIAR CSA Programming and Indicator Tool ^[10]	Metrics and tool for tracking outcomes and impact of CSA programs	Program/project	Multi-sectoral (adaptation practitioners)
Viet Nam M&E system and indicators for adaptation in the agriculture sectors developed under the NAP for the agriculture sectors project	M&E system for adaptation in agriculture in Viet Nam	National and sub-national	AFOLU (national and sub-national decision-makers)
ICRISAT MEASURE ^[11]	Digital M&E system for agriculture research for development projects.	Program/project	Multi-sectoral (adaptation practitioners)

[1] <http://www.fao.org/3/ca7407en/CA7407EN.pdf>

[2] The ten core dimensions are: 1) Secure land tenure, 2) Productivity (and stability over time), 3) Income (and stability over time), 4) Added value, 5) Exposure to pesticides, 6) Dietary diversity, 7) Women's empowerment, 8) Youth employment, 9) Agricultural biodiversity, 10) Soil health.

[3] FAO (2017). *Tracking adaptation in agricultural sectors: Climate change adaptation indicators*.

<http://www.fao.org/3/a-i8145e.pdf>

[4] <https://climateasap.org/the-asap-taxonomy/>

[5] https://www.climateinvestmentfunds.org/sites/cif_enc/files/knowledge-documents/ppcr_en_monitoringreporting_toolkit.pdf

[6] <https://drmkc.jrc.ec.europa.eu/inform-index>

[7] http://pdf.wri.org/making_adaptation_count.pdf

[8] https://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.STAP_.LDCF_.SCCF_.22.Inf_.01_M%26E_of_CCA.pdf

[9] <https://www.fao.org/climate-smart-agriculture-sourcebook/enabling-frameworks/module-c9-monitoring-evaluation/c9-overview/en/>

[10] https://ccafs.cgiar.org/resources/tools/csa-programming-and-indicator-tool#.V1_5fruLTRY

[11] The Monitoring and Evaluation of Agri-Science Uptake in Research and Extension (MEASURE) is a mobile web-based platform designed to collect real-time, geotagged data about farmers, farmland, livestock, other on-field interventions, and other key indicators of agriculture research and extension. Originally developed as a field data-collection tool, MEASURE has now transformed into a full-fledged M&E platform to track activities, manage beneficiaries and provide real-time insights through visually enabled dashboards to the project teams. <https://bigdata.cgiar.org/icrisat/> and <http://measure.icrisat.org/>

85. Furthermore, the project will seek to exchange with other proponents of the Challenge Program for Adaptation Innovation that are also working on indicators and frameworks for identifying and measuring climate adaptation MSMEs and smallholder farmers. These include (i) ?Acceleration of Fintech Enabled Climate Resilience Solutions? (UNIDO with BFA Global); (ii) ?Certification of NbS Portfolios of Inclusive Financial Service Providers for Scaling CCA and Biodiversity Finance for small-holder farmers? (IFAD and BNP Paribas); and (iii) ?Indicators Framework for CCA and Biodiversity Conservation Finance for Smallholders: Leveraging private and public finance? (IFAD and Fondation Grameen Credit Agricole).

3) Proposed alternative scenario with a brief description of expected outcomes and components of the project

86. The project will support the design of a new blended finance facility to catalyse public and private sector investment to scale-up adaptation and resilience-building in rice landscapes across Asia.^[1] The proposed financing model to be established consists of the following interrelated elements:

1) **A major regional blended finance instrument supporting adaptation** (the Resilient Rice Landscapes, RRL, Facility), managed by a financial institution such as a regional or global international development finance institution, capitalized with contributions from the GCF and the private sector. This will be composed of:

? **A de-risking facility** consisting of a funded guarantee or a subordinated tranche funded by GCF^[2], accompanying and enabling private sector investment in relevant transactions, and

? **Commercial finance** from public and private investors.

2) **A technical assistance grant** funded by GCF for the following grant components:

? **National catalytic revolving funding facilities**, providing co-funding at concessionary rates, to support the transfer of new technologies to eligible rice value chain actors established as legal entities to strengthen their adaptive capacity in situations where commercial investments in support of adaptation are not feasible. The management of these funds may occur at a regional and or national levels, with the preference for the latter to facilitate stakeholder access and maximize durability. These may be associated with the SRP national chapters.

? **Non-returnable grant facility** for one-off (results-based) investments in capacity development including training on adoption of the SRP Standard and verification systems in support of sustainable procurement and de-risking of supply chains, as well as other public goods and/or pilots focused on adaptation options at the farm and landscape levels. This will be managed at the facility (regional) level. Grant funding will be prioritised to entities which can demonstrate capacity in sustainable, climate-resilient rice landscapes/value chains/livelihoods.

^[1] It is envisaged that in the future the model may be scaled out to other important rice producing regions globally, such as West Africa.

^[2] A funded guarantee is capital set aside by a third party that will be used in case of default by the borrower. A subordinated tranche is a loan tranche that absorbs losses in the event of borrower default, i.e., creditors who own subordinated debt will not be paid until more senior tranches are paid in full.

87. The project will bring together a number of major related initiatives to expand the reach and deepen the impact of SRLI projects in Asia. This regional scope will optimize cost-effectiveness and facilitate the engagement of relevant private sector stakeholders, companies and investors, across the region and beyond, and builds on the strong basis of regional collaboration established to date by the SRLI including the Sustainable Rice Platform (SRP) networks and national chapters. It is provisionally proposed that the project will focus on three target countries ? Bangladesh, Cambodia and Viet Nam ? where it will support producers and other value chain stakeholders, as well as relevant local financial institutions in accessing, managing and investing funds channelled from the regional finance package. This GEF-funded project will design and secure key partnerships for a larger regional rice landscapes facility, including identifying investment opportunities, partners, governance and resource mobilization structures. The focus countries for this project have been selected on the basis of the rice-related adaptation priorities, and the opportunities that exist there for working with relevant local private and public sector stakeholders, and building on other initiatives and partnership opportunities.

88. The project's Theory of Change is shown below. The project's objective is to catalyse public and private financing for climate-resilient rice landscapes, value chains and livelihoods. Three distinct outcomes will help achieve this objective: (1) the design of an integrated financing mechanism; (2) the enhancement of financial and technical capacities of farmers (women and men), producer groups, counterparts and intermediaries to invest effectively in climate resilience; and (3) the development and implementation of program-wide impact monitoring, governance, adaptive learning and knowledge sharing mechanisms. It is anticipated that these outcomes will ultimately lead to (i) increased access by

producers, value chain actors and governments to financing to invest in climate-resilient rice landscapes, value chains and livelihoods, (ii) strengthened capacity to develop and fund high impact resilient rice landscapes investment projects with verifiable adaptation benefits, (iii) enhanced technical capacities among the local private sector, and smallholder farmers and farmer groups, to transition to resilient rice production landscapes, and (iv) continuous improvement of financing mechanisms to support scaling of adaptation and resilience benefits in rice landscapes and value chains. Based on this, the project's expected long-term impact is that stakeholders implement practices and technologies for climate-resilient rice landscapes, value chains and livelihoods.

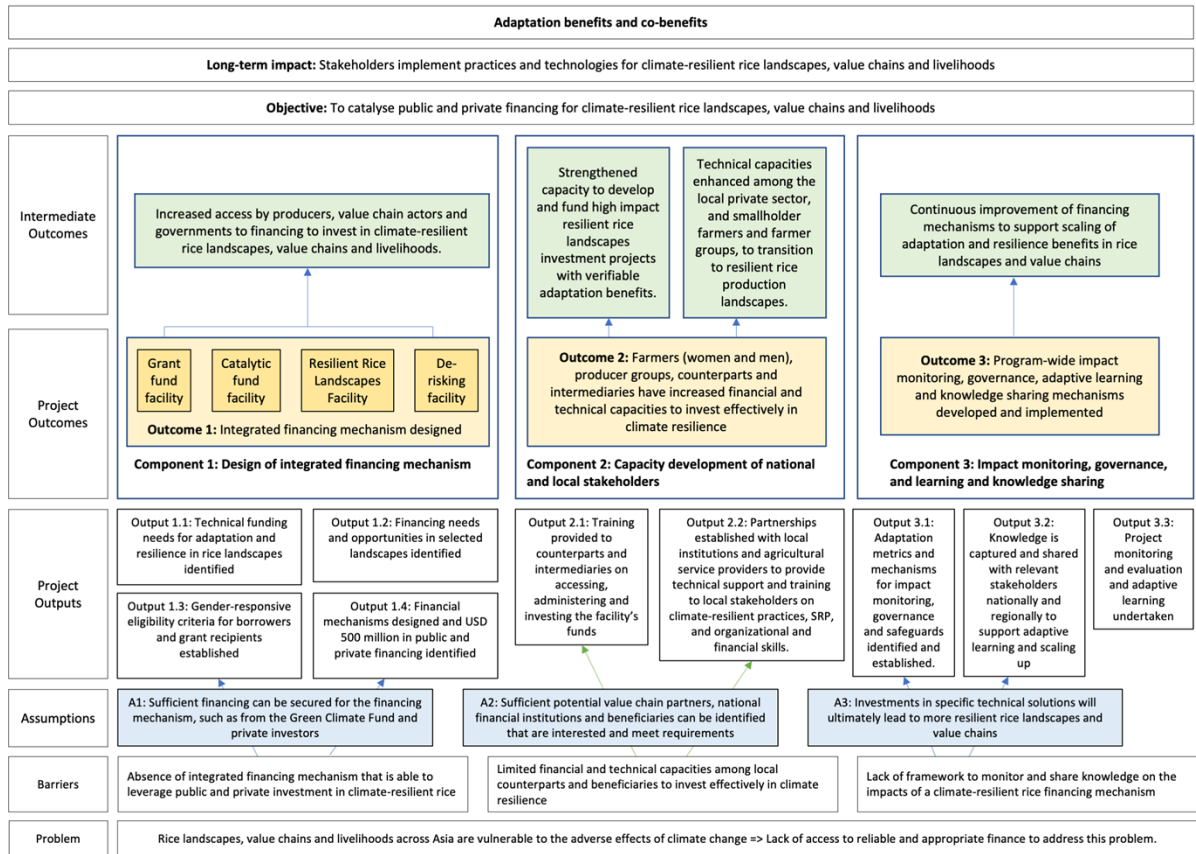
89. *Climate-resilient landscapes approach.* Although the Facility's primary target will be the rice sector, it is important to note that it may also invest in other climate-resilient livelihoods and value chains within rice-dominated landscapes as part of a climate-resilient landscape approach. This may, in the context of some rice landscapes, involve diversification away from rice to new crops such as pulses and oilseeds or other livelihoods. Details will be elaborated during project preparation and implementation.

90. The Theory of Change is based on a number of assumptions. Firstly, it assumes that sufficient financing can be secured for the financing mechanism, such as from the Green Climate Fund and private investors. Secondly, it is based on the assumption that sufficient potential value chain partners, national financial institutions and beneficiaries can be identified that will be interested in the financing mechanism and meet the minimum requirements of the fund. Thirdly, it assumes that investments in specific technical solutions will ultimately lead to more resilient rice landscapes and value chains.

Opportunity: The push for supply chain resilience

91. The project builds on the opportunity of an increasing push from supply chain actors towards sustainability and supply chain resilience. Wholesale/large retail commodity buyers (such as Mars, Marks and Spencer, Olam) are starting to redirect their purchase orders on countries with resilient supply chain, which ensure continuity of supply, sustainability measures, and build capacity of farmers on climate-smart agriculture. However, lower-income countries such as Cambodia lack competitive advantage in this area as they have poor storage and processing facilities, limited irrigation systems, low farmer organization rate, and a weak certified seed production system.^[132] Investing in supply chain resilience represents an opportunity for Governments, private sector and smallholder farmers in the region. Additionally, companies are increasingly investing in solutions that help them mitigate GHG emissions in their supply chains (and which often have adaptation co-benefits).^[133]

Figure 5: Theory of Change



92. A formal proposal will be prepared with the project's assistance for submission to the Green Climate Fund (GCF) and other potential financiers to support i) the de-risking facility (GCF guarantee); ii) additional capitalization of the Facility (public and private investors); iii) the revolving and grant funds (GCF grant). The proposed finance mechanisms and support structures are shown in Figure 6 below. The timeline of the GEF project and related GCF and additional investments is shown in Figure 7. During the project's lifetime, the project will enhance the capacity of an estimated 10-15 organizations (financial institutions, farmers' organizations, private sector) and about 6,500 individuals (50% women) (e.g., financial institution staff, private sector representatives, farmer organization members, producers). Furthermore, it is estimated that the future investment of the Facility will benefit up to 1 million people who are engaged in the rice sector[134] and depend on rice landscapes, and deliver adaptation benefits over an area estimated at between 2 and 4 million ha[135].

Figure 6: Proposed finance mechanism and support structures

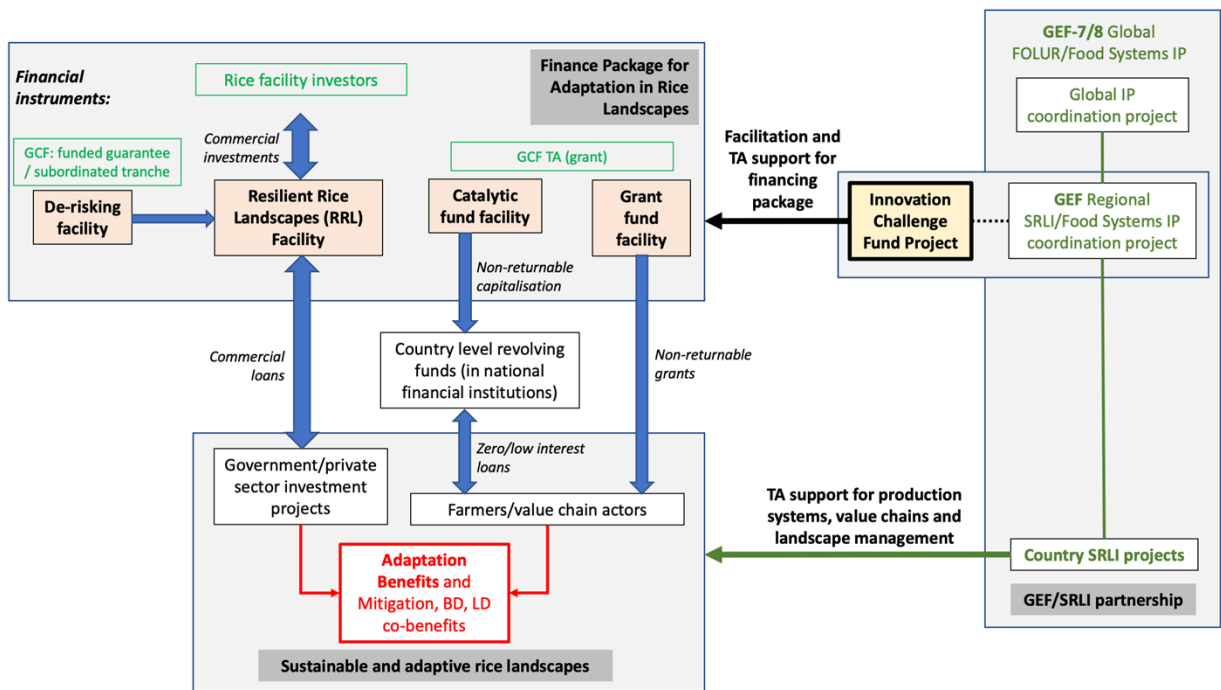
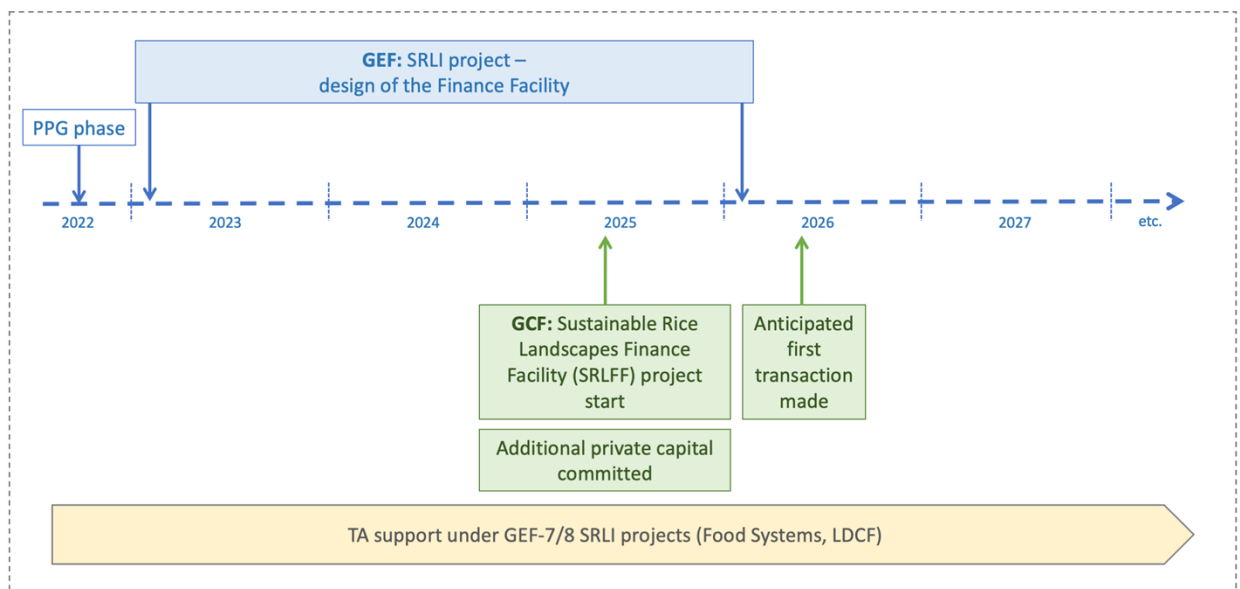


Figure 7: Tentative timeline



93. The project components, outcomes and outputs are described in more detail below.

Component 1: Designing an integrated financing mechanism for investments in climate-resilient rice landscapes, value chains and livelihoods

94. Under Outcome 1, the project will design an integrated financing mechanism that will result in increased access by producers, value chain actors and governments to financing for climate-resilient rice[136] landscapes, value chains and livelihoods. This will include the following outputs:

95. Output 1.1: Technical options and funding needs for adaptation and resilience in rice landscapes will be identified based on existing assessments and evolving knowledge base in the region and in the target landscapes. Technical assistance will be provided in each of the target countries to identify value chain wide management options, field measures and technologies capable of delivering adaptation benefits (and mitigation co-benefits). Based on these options, the project will help identify those measures that can be financed through existing funding sources, and those that require external funding and longer-term capital. While the primary focus will be on rice, the project will also consider funding other investments in rice landscapes including for diversification, where this helps build climate resilience and sustainable livelihoods. Additionally, these options will be identified within the context of existing national and local adaptation plans and with a landscape view to ensure that the identified options contribute to climate-resilient landscapes and do not result in maladaptation.

96. Output 1.2: Based on the technical options identified above, the project will identify financing needs and opportunities in selected landscapes, as well as potential counterparts. This Output will help to gain a better understanding of the financing needs and challenges and identify specific potential transactions at the national or regional level. It is anticipated that future fund disbursements will be primarily directed at national financial institutions who will act as intermediaries. Needs for technical assistance to accompany the Fund's investments will also be identified.

97. Output 1.3: In parallel with the adaptation metrics and indicators developed under Output 3.1, the project will develop gender-responsive eligibility criteria for borrowers and grant recipients. These criteria will be established based on considerations of the potential to deliver adaptation and resilience benefits (as well as mitigation co-benefits) and to generate livelihood benefits to smallholder farmers, in particular women and vulnerable groups.

98. Output 1.4: The project will facilitate and elaborate a detailed proposal and documentation on the structuring, establishment, and management of the package of interrelated financial instruments described above based on real financing needs within the specific landscapes and regionally, which will support the scaling up of adaptation practices. Working closely with identified partners, the project will aim to identify at least USD 500 million in public and private financing. It is expected that the USD 500 million in public and private investment will be identified and initial commitments obtained during the life of the project. However, the formal commitments of funds may occur beyond the life of the project.

Component 2: Capacity development of national and local stakeholders

99. Under Outcome 2, the project will help strengthen capacities of stakeholders along the finance supply chain (including national production sector institutions, value chain actors, farmer federations and national financial institutions) to access, administer and invest funds (commercial, revolving and/or grant) effectively. It will also establish partnerships to provide technical assistance to farmers (women and men) and producer groups in implementing climate-resilient measures and in enhancing their organizational and financial skills. This will ultimately lead to increased financial and technical capacities among these stakeholders to invest effectively in climate resilience.

100. Output 2.1: Training will be provided to counterparts and intermediaries on accessing, administering and investing the facility's funds (technical and financial aspects). This may involve regional and national/local financial institutions and other public and private organizations working in agriculture finance in the region and selected landscapes. The project will build on lessons learned from similar instruments.

101. Output 2.2: Partnerships will be established with local institutions and agricultural service providers to provide technical support and training to local stakeholders on climate-resilient practices, including those set out in the SRP standard, as well as organizational and financial skills. The project aims to harness the large network of its partners in the selected landscapes to establish partnerships. This will be done through Letters of Intent (LOIs), Memoranda of Understanding (MOUs) or other relevant instruments. These partnerships will lay the foundations for the provision of training and

technical assistance to farmer groups and producer organizations on managing and investing finance effectively for climate resilience (e.g., organizational, business management skills, financial literacy, SRP), to enable them to access the Facility's funds in the future.

102. It is envisaged that, once the Facility is established (i.e., after the end of the GEF project), additional technical assistance will be financed by the GCF grant facility or other sources to accompany the fund's investments (see Figure 6 for the different components of the Facility). This technical assistance may involve, among others, setting up and building capacity of farmer organizations, training farmers on the SRP Standard and continuous improvement process, developing landscape-level adaptation/ investment plans, establishing water accounting and strengthening Water User Groups, and developing a pipeline of commercially viable high impact investment projects with verifiable adaptation and emissions reduction benefits. The potential use of FAO RuralInvest[137] (and associated training) for feasibility analyses will also be considered. Finally, while the Facility itself will not include insurance, linkages may be established with existing index-based crop insurance, where feasible.

Component 3: Impact monitoring, governance, and learning and knowledge sharing

103. Under Outcome 3, the project will develop and implement harmonized program-wide impact monitoring, governance, adaptive learning and knowledge sharing mechanisms. This will also include the definition of adaptation metrics for use in the mechanism, with potential for broader application, and user benchmarking (measuring the performance of the financial mechanism against other funds) and feedback mechanisms.

104. **Output 3.1:** The project will identify and establish adaptation metrics and key performance indicators (KPIs) for program M&E, impact and Environmental, Social and Governance (ESG) monitoring of the financial mechanism. This will build on the experience of UNEP's KPI Directory, among others. Adaptation metrics will ensure that activities supported by the financial mechanism are truly climate resilient and deliver benefits to the most vulnerable, including women. This will draw from existing adaptation indicators such as those developed by the ICRISAT MEASURE tool^[1], the SRP Standard and Performance Indicators^[2], FAO's Tool for Agroecology Performance Evaluation (TAPE)^[3] and Tracking Adaptation in Agricultural Sectors (TAAS)^[4] (see also Table 2 above).

^[1] <https://bigdata.cgiar.org/icrisat/> and <http://measure.icrisat.org/>

^[2] <https://www.sustainableice.org/resources/>

^[3] <https://www.fao.org/agroecology/tools-tape/en/> and <https://www.fao.org/3/i8145e/i8145e.pdf>

^[4] <https://www.fao.org/3/i8145e/i8145e.pdf>

Impact metrics will be developed at multiple levels, including:

- ? On-farm ? Monitoring at this level will enable the program to measure improvements in individual and community adaptive capacities, support benchmarking and potentially even trigger additional finance.
- ? Sub-project ? Monitoring the impacts of individual sub-project investments.
- ? Landscape ? Monitoring at the landscape level will ensure that the various investments contribute to building climate resilience at the landscape level and do not result in maladaptation.
- ? Finance institutions ? Aggregating data for reporting on the financial institutions' investments in ESG.
- ? Sub-national ? Aggregating data to understand how the Facility is contributing to national goals.
- ? Programmatic ? Fund/portfolio level contribution to LDCF/SCCF and other adaptation metrics and to the SDGs.

105. The KPIs will also measure the amount of private sector finance mobilized as one of the indicators of success of the Facility.

106. Environmental, Social and Governance (ESG) indicators will measure the Fund's performance against agreed environmental and social outcomes and will ensure that the Fund's investments will not result in any negative environmental and social impacts. Hence, under this Output, the project will analyse safeguards issues for the financial mechanism and develop an ESG policy and a gender-responsive results framework. It will also develop a gender mainstreaming plan, stakeholder engagement plan, an accountability and grievance mechanism and other safeguard documents for the Facility in line with FAO, GEF and potential donor requirements. Finally, the governance arrangements between parties at international and local levels will be defined to establish how the funding will be managed.

107. Opportunities to include a climate mitigation element and results-based financing (by quantifying mitigation co-benefits) will also be explored ? e.g., based on the existing AgResults program in Viet Nam and expanding SRP's assurance program and in line with SRP Performance Indicator 8. *Greenhouse gas emissions* aiming to reduce methane and nitrous oxide emissions from rice cultivation. First, it is anticipated that mitigation will be an integral part of the blended finance facility and its criteria, i.e., the Facility would finance projects with adaptation and/or mitigation benefits. Second, the project will explore options for integrating results-based payments (from carbon credit buyers). Technical assistance could be provided through the grant facilities, potentially laying the foundations for long-term revenue streams from carbon finance. Requirements for geospatial systems will also be analysed and linkages with ICRISAT's MEASURE tool explored.

108. Output 3.2: Under this Output, the project will develop and implement a knowledge management and communications strategy. Knowledge on the establishment of the financial mechanism will be captured and shared with relevant stakeholders nationally and regionally to support adaptive learning and scaling up. Additionally, the project will convene business partners and conduct advocacy on the financial mechanism and its scaling.

109. Output 3.3: Project monitoring and evaluation and adaptive learning undertaken.

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

110. The project will support the establishment of a new blended finance facility to catalyse public and private sector investment to scale up adaptation and resilience-building in rice landscapes across Asia. It thereby directly contributes to LDCF/SCCF Strategy Objectives 1 and 2, including in relation to innovative financial instruments and investment models to enhance resilience, as well as mainstreaming of adaptation considerations into investments. Specifically, the project contributes to the following LDCF outcomes and outputs:

- ? LDCF Outcome 1.1: Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience [this will be an outcome of the Facility rather than the GEF grant itself]
 - o Output 1.1.1 Physical and natural assets made more resilient to climate variability and change. By fostering investments in climate-resilient rice landscapes, the project will make the rice landscapes (in particular, agricultural land) more resilient to climate change.
 - o Output 1.1.2 Livelihoods and sources of income of vulnerable populations diversified and strengthened: The project will contribute to diversified and strengthened livelihoods by supporting enhanced access to finance and adoption of technical solutions.

- ? LDCF Outcome 1.2: Innovative financial instruments and investment models enabled or introduced to enhance climate resilience

- o Output 1.2.2 Investment models developed and tested: The project will develop and test an innovative financing mechanism aimed at catalysing financing from public and private sources.

- ?
- o LDCF Outcome 2.2: Innovative financial instruments and investment models enabled or introduced to enhance climate resilience

- o Output 2.2.1 Barriers to climate finance access targeted

- o Output 2.2.2 Adaptation and resilience relevant financing coordinated for synergistic programming including with the private sector

- ?
- o LDCF Outcome 2.3: Institutional and human capacities strengthened to identify and implement adaptation measures

- o Output 2.3.1: Number of people trained regarding climate change impacts and appropriate adaptation responses

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

111. The budget from LDCF/SCCF for this 2-year project is USD 1,000,228. This builds upon ongoing GEF/LDCF investment in SRLI projects of around USD 58 million, and is expected to leverage around **USD 3.5** in co-financing to support the design and structuring of the financial mechanism. Additionally, through the project's interventions, it is anticipated that around USD 500 will be leveraged in future public and private sector investment in the Facility, including from the Green Climate Fund (GCF) and other public and private investors.

112. Without GEF investment, it would take considerably longer for existing market barriers to be removed and access to finance for adaptation in rice landscapes would remain limited. GEF incremental resources will cover the following:

- ?
- o **Facilitate and advise on the structuring, establishment and management of the package** of interrelated financial instruments described above based on real financing needs within the specific landscapes and regionally, which will support the scaling up of adaptation practices;

- ?
- o Provide technical assistance (TA) support for **defining and applying financing eligibility criteria**, based on considerations of potential to deliver adaptation and resilience benefits;

- ?
- o Provide TA support to identifying value chain wide management options and technologies capable of optimizing adaptation benefits;

- ?
- o Develop **harmonized programme-wide impact monitoring and adaptive learning**, including the definition of adaptation metrics for use in the mechanism, with potential for broader application, and user benchmarking and feedback mechanisms;

- ?
- o **Strengthen capacities of stakeholders along the finance supply chain** (including national production sector institutions, farmer federations and national financial institutions) to access, administer and invest funds (commercial, revolving and/or grant) effectively.

113. The project's co-financing will contribute to capacity building on the technical options (such as SRP), advocacy with partners, leveraging partnerships and linking with potential financiers and downstream market actors, as well as providing monitoring and evaluation frameworks.

6) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)

114. The project will result in the following adaptation benefits. Firstly, by supporting the establishment of a financing mechanism for climate-resilient rice landscapes, it will enable investments that will reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change through transfer of technologies and innovative practices for adaptation. Secondly, it will help to mainstream climate change adaptation and resilience in financing for systemic impact, and will contribute to strengthening institutional and human capacities to identify and implement (or finance) adaptation measures. It is estimated that the future investment under the

fund will benefit up to 1 million people who are engaged in the rice sector[138] and depend on rice landscapes, and deliver adaptation benefits over an area estimated at between 2 and 4 million ha[139]. More specifically, the project will result in the following outputs:

LDCF/SCCF Outcome / Output	LDCF/SCCF Indicator	Project target
Objective 1: Reduce vulnerability and increase resilience through innovation and technology transfer for climate change adaptation		
Outcome 1.1: Technologies and innovative solutions piloted or deployed to reduce climate-related risks and/or enhance resilience		
Output 1.1.1: Physical and natural assets made more resilient to climate variability and change	Total no. of direct beneficiaries from more resilient physical and natural assets Area of land managed for climate resilience (ha)	12,000 (50% women) as a result of the trainings below (SRP and other partners) (assuming that at least 50% will apply improved practices after receiving the training, and that an average of 4 household members per farmer household will benefit from the improved practices, 3,000 x 4) 3,000 ha (average of 1 ha per farmer household)
Output 1.1.2: Livelihoods and sources of income of vulnerable populations diversified and strengthened	Total no. of direct beneficiaries with diversified and strengthened livelihoods and sources of income (m/f)	N/a (covered by the above to avoid double-counting)
Outcome 1.2: Innovative financial instruments and investment models enabled or introduced to enhance climate resilience		
Output 1.2.2: Financial instruments or models to enhance climate resilience developed	Financial instruments or models	1
Objective 2: Mainstream climate change adaptation and resilience for systemic impact		
Outcome 2.2: Adaptation considerations mainstreamed into investments		
Output 2.2.1: No. of institution(s) with increased ability to access and/or manage climate finance	No. of institution(s)	10-15

Output 2.2.2: Institutional coordination mechanism(s) created or strengthened to access and/or manage climate finance	No. of mechanism(s)	1
Outcome 2.3: Institutional and human capacities strengthened to identify and implement adaptation measures		
Output 2.3.1: Number of people trained regarding climate change impacts and appropriate adaptation responses	Total no. of people trained	<p>6,500 (50% women), composed of:</p> <p>? Financial institution staff trained directly by the project^[1]: 500 (50% women)</p> <p>? Farmers and other stakeholders trained on SRP Standard (through SRP co-financing): 5,000 (tbc) (50% women)</p> <p>? Farmers and other stakeholders trained through other partners^[2] (to be identified under Output 2.2 and co-financed by the project): 1,000 (50% women)</p> <p>^[1] As a result of Output 2.1. Estimated 30-50 staff per financial institution, total of 10-15 institutions (3-5 per country).</p> <p>^[2] On climate-resilient practices, SRP, and organizational and financial skills, as described under Output 2.2.</p>

115. Additionally, the project will have co-benefits in the areas of biodiversity, land degradation and climate change mitigation, as well as socio-economic benefits. Biodiversity benefits will be achieved by promoting investment in sustainable agriculture practices in line with the SRP Standard, such as to reduce agrochemical use, avoid land conversion and contribute to the conservation of key biodiversity indicator species. Land degradation benefits will be achieved by investing in improving land and water use, reducing chemical use, and improving soil fertility, which will contribute to improved agro-ecosystem services in the target landscapes. Finally, climate change mitigation benefits will be derived by investing in technologies that will reduce chemical use and improve water management, which will reduce nitrous oxide and methane emissions; as well as by increasing soil organic carbon.

7) Innovation, sustainability and potential for scaling up

116. *Innovation.* The project is innovative as it is the first financial mechanism globally specifically targeting rice landscapes and value chains. It is also innovative through the following elements:

- ? A **suite of interrelated and complementary financial instruments** building upon an established multi-sector partnership and baseline^[140], addressing diverse needs and risk profiles, with a commercially sustainable and de-risked bond facility at its core, accompanied by catalytic funding to remove key obstacles to viability;

- ? An **innovative framework of metrics** to define and monitor sustainable rice farming, represented by the SRP Standard, the world's first voluntary rice sustainability standard, together with Performance Indicators mapped to the SDGs.
- ? A focus on farming, value chain and landscape management systems capable of **simultaneously delivering adaptation and mitigation benefits** (opening the door for mitigation-tied carbon credits to contribute to the funding of adaptation).
- ? A mutually beneficial programmatic partnership involving multiple actors, in which:
 - Resources from the **LDCF/SCCF Challenge Program** will catalyse the establishment of the package of financial instruments;
 - Anticipated **GCF resources** will leverage adaptation impact, de-risk the RRL Facility, contribute to its capitalization, and fund revolving and non-returnable grant facilities;
 - **Public and private investors** will provide the bulk of the capitalization of the Facility;
 - A **regional and/or global financial institution** will administer the Facility on a commercial basis;
 - **GEF and LDCF will finance SRLI projects** in the region[141]: the Facility will help to meet the financing needs of these projects' beneficiaries while the SRLI projects will provide production-focused TA to ensure that the RRL Facility investments translate into reliable adaptation (and other) benefits on the ground;
 - **SRLI partners[142]** will optimize the effectiveness of the model in delivering adaptation (and other) impacts, through the contribution of technical inputs as needed across the project in accordance with their respective areas of technical specialization.

117. *Sustainability.* The project will deliver sustainable and durable impacts in the targeted rice landscapes and beyond. Firstly, financial and economic sustainability will be ensured by establishing a financial mechanism that will provide targeted support in climate-resilient technologies and practices that are considered financially sustainable and providing economic returns in the future, while requiring some initial de-risking, technical assistance or concessional or grant financing. The financial mechanism primarily consists of returnable loans, which will make the instrument financially sustainable and self-sufficient following initial investment. Secondly, the project will ensure environmental sustainability by investing in sustainable, resilient technologies that are biodiversity-friendly and address land and environmental degradation. The project will also contribute to institutional sustainability by strengthening national financial institutions' capacities to implement the financing mechanism and foster investments in climate-resilient rice. Finally, social sustainability will be ensured by strengthening producer institutions, and farmers'/organizations' capacities to manage and invest finance effectively; by investing in local farmers' livelihoods; as well as by putting in place environmental, social, and governance (ESG) criteria for the fund.

118. *Potential for scaling up.* The project will initially be implemented in the three rice-producing countries Bangladesh, Cambodia and Viet Nam. However, the financial mechanism will be regional in scope and will eventually target rice producing countries throughout Asia. Details on the timeline and mechanisms of including additional countries will be elaborated during project implementation. Additionally, it is envisaged that in the future the model may be scaled out to other important rice producing regions globally, such as West Africa. This regional and global scope will optimize cost-effectiveness and facilitate the engagement of relevant private sector stakeholders, companies and investors, across the region and beyond, and builds on the strong basis of regional collaboration established to date by the SRLI including the SRP networks, National Chapters and downstream market actors. It is anticipated that the project will catalyse significant investment in the transformation of the rice sector and rice landscapes towards resilience and that the investment model itself can be replicated and scaled up at national, regional and global levels.

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- [21] Climate-smart agriculture (CSA) is an approach to reorienting agricultural systems to support development and ensure food security in a changing climate. CSA has three primary dimensions: (1) sustainably increasing agricultural productivity and livelihoods, (2) increasing climate-change adaptability and resilience, and (3) contributing to climate-change mitigation when possible. <http://www.fao.org/climate-smart-agriculture/en/>
- [22] See also <https://www.fao.org/climate-smart-agriculture-sourcebook/production-resources/en/> and <https://www.fao.org/publications/card/en/c/CB3991EN/>
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<https://actionaid.org/sites/default/files/publications/Principles%20for%20just%20transition%20in%20agriculture.pdf> and

<https://www.wbcsd.org/Programs/Food-and-Nature/Food-Land-Use/Global-Agribusiness-Action-on-Equitable-Livelihoods/Resources/Innovative-and-inclusive-finance-for-a-just-rural-transition-case-studies>

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- [109] <https://www.gafspfund.org/projects/increasing-access-finance-farmers-organizations-bangladesh>
- [110] <https://greeninvestasia.com/>
- [111] <https://www.fao.org/hand-in-hand/en/>
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- [135] Estimate to be further confirmed during project formulation and implementation: the final figure will be subject to beneficiary demand as the model will be demand-driven.
- [136] May involve rice and other crops/commodities in rice landscapes.
- [137] <https://www.fao.org/in-action/rural-invest/en/>
- [138] Estimated on the basis of the 868,200 beneficiaries (men and women) of GEF-7 SRLI projects in Cambodia, China, India, Indonesia, Myanmar, Thailand and Vietnam (see Annex 2). This only represents an estimate, as the future Facility may invest in other landscapes than those indicated in Annex 2.
- [139] Estimate to be further confirmed during project formulation and implementation: the final figure will be subject to beneficiary demand as the model will be demand-driven.
- [140] The SRLI: financing for SRLI projects under GEF-7 totals around USD 677.7 million.
- [141] Projects currently under development or pending implementation under GEF-7, and potentially GEF-8

[142] Especially FAO, GIZ, UNEP and IRRI

1b. Project Map and Coordinates

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

Location	Estimated Coordinates ? Lat/Long ^[1]
Bangladesh	N 24? 0' 0" E 90? 0' 0"
Cambodia	N 13? 0' 0" E 105? 0' 0"
Viet Nam	N 16? 10' 0" E 107? 50' 0"

[1] Coordinates are from <http://www.geonames.org/>.

[2] Source: <https://www.un.org/>, <https://www.unocha.org/>. Note: The boundaries and names shown and the designations used in these maps do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries.

Bangladesh map [2]



Map No. 3711 Rev. 2 UNITED NATIONS
January 2004

Department of Peacekeeping Operations
Cartographic Section

Cambodia map [2]



Map No. 3860 Rev. 4 UNITED NATIONS
January 2004

Department of Peacekeeping Operations
Cartographic Section

Viet Nam map [2]

VIET NAM



2. Stakeholders

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

Indigenous Peoples and Local Communities

Civil Society Organizations

Private Sector Entities Yes

If none of the above, please explain why:

In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement

1. Initial consultations with private sector, including international financial institutions (IFIs), banks, rice buyers, traders, and millers were held during the development of related GEF-7 projects in Bangladesh, Cambodia and Viet Nam, as well as the GCF-PEARL project proposal for Cambodia. as described in the baseline section. Consultations with civil society, farmers organizations and indigenous peoples were also held during the development of these related projects. Additional consultations were held (mostly through online consultations) with SRLI partners during the current PIF development, including WBCSD, UN Environment Programme, FAO, the Sustainable Rice Platform (SRP), the German Agency for International Cooperation (GIZ) and the International Rice Research Institute (IRRI). Potential fund managers and/or financing partners were also consulted, including the International Finance Corporation (IFC), the Green Climate Fund (GCF), and GEF. Experts from Clarmondial AG, a partner of SRP and the executing partner of Conservation International GEF-7 NGI Food Securities Fund project, was also consulted and provided expert advice on the project design. Finally, private sector stakeholders were consulted during the roundtable discussions organized by the SRLI in 2021.

2. During the project preparation grant (PPG) phase, more detailed consultations will be held with representatives from international organizations, civil society, private sector, international and national financial institutions, farmers organizations, and research institutes. This will be done through PPG inception and validation workshops as well as individual consultations via face-to-face or online meetings.

3. *Indigenous Peoples.* In the Bangladesh GEF-7 LDCF project, Indigenous People live in project areas, particularly in the Chittagong Hill Tracts. In Cambodia, the GEF-7 LDCF project target areas in the Tonle Sap area include indigenous ethnic minority groups, who will be part of the project's beneficiaries. In the Vietnam GEF-7 FOLUR project target provinces, at least 10% of the selected target communities (in terms of their area and population) have a majority of Khmer or Cham inhabitants. Detailed analyses were conducted, and Free, Prior and Informed Consent (FPIC) procedures included in these projects. During the PPG phase of the proposed project, a more detailed analysis will be carried out and necessary safeguards measures will be put in place as part of the financial mechanism (which may invest in additional landscapes going beyond the GEF-7 projects). The project will ensure that indigenous peoples equally benefit from the activities and from the Fund's investments, that FPIC requirements are met, and that any negative impacts on indigenous peoples (and other vulnerable groups) are avoided.

4. An initial list of key stakeholders is provided below.

Name of Institution	Proposed role in the project / the financial mechanism	Means of engagement
1. National Governments (Ministries of Environment, Agriculture, Finance, etc.)	Ensure alignment with national priorities and policies in adaptation financing	Regular consultations during preparation and implementation
2. National financial institutions and banks	Intermediaries	Detailed consultations during preparation to discuss and define potential roles
3. International financial institutions and private investors	Providers of capital, fund manager	Consultations during preparation and implementation

4. Civil society organizations, national and international NGOs	Provision of technical assistance, consulted on local level adaptation and financing needs	Consultations during preparation and implementation, potential partners or service providers
5. Local communities, indigenous peoples, community-based organizations (CBOs)	Beneficiaries	Consultations during preparation and implementation
6. Farmers associations, producer groups, cooperatives, farmer groups	Beneficiaries	Consultations during preparation and implementation
7. International and national private sector stakeholders including producers, processors, traders and buyers	Counterparts (borrowers, beneficiaries)	Consultations during preparation and implementation
8. Research institutions and universities	Potential partnerships for provision of technical assistance	Consultations during preparation and implementation
9. UN agencies and development partners	Potential partnerships for provision of additional concessional financing	Consultations during preparation and implementation

3. Gender Equality and Women's Empowerment

Briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis).

1. *Gender dimensions.* Women's contribution to agricultural production in Asia and across the globe is widely recognized. Women in South Asia and in Southeast Asia contribute up to 80% and 60% of the required labour, respectively. ^[1] However, their contribution is often underestimated and underrepresented in official data as it is mostly informal and unpaid. Also, women's access to land and productive assets is lower than men's. Access to credit is often a limiting factor for women smallholder farmers for several reasons including social norms, lack of assets that can be used as collaterals, lower education or literacy rates, among others.^[2] A study conducted in 2013 found that in South and Southeast Asia, only 1% of smallholders' credit needs for longer term investments are met. Women, low-income groups, and ethnic minorities face even larger challenges to meeting their finance needs.^[3] Enhancing women's opportunities and income in the agriculture and rural sector is crucial in efforts to enhance productivity, nutrition, and reduce poverty.

2. In Bangladesh, women's participation in the agriculture sector is 64.4%; however, as of 2017 they owned only 2-4 % of agricultural land, with little or no access to extension services and information about innovative technologies. Women's activities in the agriculture sector include, among others, post-harvest processing, livestock and poultry rearing, household agriculture, horticulture, food processing and selecting and storing seeds. A large percentage of rural women are unpaid family workers.^{[4],[5]}

3. In Cambodia, inequalities exist in terms of agricultural land ownership, land size, and cultivated land. With regard to accessing loans, the ratio of male-headed to female-headed agricultural households is 5:1, meaning that female-headed households are much less likely to

access loans.^[6] Additionally, current agricultural systems in Cambodia unduly burden and limit the options of women, women-led households, and the elderly, in particular due to the out-migration of working-age men from rural communities. The roles of women have drastically expanded, often in ways that increase their personal and household vulnerabilities.^[7]

4. In Viet Nam, gender inequalities in agriculture, food and nutrition security are visible in labour and in access to resources (land, finance, technology, training and markets) and agricultural extension services. Women constitute a critical workforce in agricultural production, especially in rural areas, where 63.4% of working women are in agriculture compared to 57.5% of working men. Women in Viet Nam are involved in agricultural labour but are also burdened with unpaid care work. This burden limits women's capacity to improve their knowledge and skills around new technologies. Furthermore, women are also more likely to work on smaller farms and to cultivate subsistence crops.^[8] In the Vietnam GEF-7 project target area, more than 20% of the households 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 roles. 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.^[9]

5. Plans for gender-responsive project design and implementation. A more detailed gender analysis will be conducted during project preparation to better understand women's needs and priorities in relation to the financing mechanism. Also, during implementation, the project will develop a gender mainstreaming plan for the financing facility, to ensure that women smallholder farmers equally benefit from the facility and that it addresses women's specific needs and vulnerabilities to climate change. This will be closely linked with SRP Performance Indicator 12 on Women empowerment. The Women's Empowerment Scorecard developed by SRP will be used as a guidance for the project's indicators, which measures, among others, women's access to finance, training and decision-making. Additionally, to accelerate financial inclusion, the project will ensure that youth and women agri-entrepreneurs benefit from the project's capacity building and technical assistance. When identifying technical options, it will be important to understand the implications and potential benefits to women.^[10]

^[1] Earth Security Group (2019). Financing Sustainable Rice for a Secure Future. Innovative Finance Partnerships for Climate Mitigation and Adaptation. <https://earthsecuritygroup.com/wp-content/uploads/2019/11/ESG-Financing-Sustainable-Rice.pdf>

^[2] FAO (2019). Women's access to rural finance: challenges and opportunities. <https://www.fao.org/3/ca5167en/ca5167en.pdf>

^[3] <https://www.ifpri.org/blog/project-will-explore-ways-boost-southeast-asia-smallholders%E2%80%99-access-finance>
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^[4] Islamic Development Bank (2019). Country Gender Profile. Bangladesh. <https://www.isdb.org/sites/default/files/media/documents/2020-09/Bangladesh%20Gender.pdf>

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[6] FAO (2010). Cambodia National Gender Profile of Agricultural Households. <https://www.fao.org/3/k8498c/k8498c00.pdf>

[7] Cambodia GEF-7 LDCF Project Document "Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region" (GEF ID 10177).

[8] FAO (2019). Country Gender Assessment of Agriculture and the Rural Sector in Vietnam. <https://www.fao.org/3/ca6503en/ca6503en.pdf>

[9] Vietnam GEF-7 Project Document, "Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam" (GEF ID 10245).

[10] Vietnam GEF-7 Project Document, "Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam" (GEF ID 10245).

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;

improving women's participation and decision-making; and/or Yes

generating socio-economic benefits or services for women. Yes

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

Yes

4. Private sector engagement

Will there be private sector engagement in the project?

Yes

Please briefly explain the rationale behind your answer.

1. Private sector engagement is at the core of the model, through:

? **Commercial investment in the RRL Facility;**

? **Mobilization of local private sector financial institutions;**

? **Mobilization of resources from private sector value chain stakeholders and subsequent investment in resilient rice production and value chains (by private sector input and TA suppliers, millers, traders etc.) leveraged by the finance available through the Facility.**

2. Private sector representatives have been involved in shaping the concept of the proposed project through their participation in the roundtables and the rice finance report mentioned in the baseline section, which were held in 2021 and during which the establishment of a Finance Facility was discussed. The Roundtable discussions included value chain actors and financial institutions such as Olam, SunRice, the UBS Optimus Foundation, IFC, and Rabobank. Additionally, private companies and financial institutions were consulted during the development of the GEF-7 projects in Bangladesh, Cambodia and Viet Nam, to which this project links closely (see *Section 6. Coordination*). These included, among others, processors including Amru Rice and BRICo in Cambodia, Mars Food Group, Olam, and Bangladesh Bank.

The ongoing and active participation of SRLI members in the project will be crucial in realizing this private sector engagement. SRLI partners will be involved in various technical aspects of the project, which will be defined in more detail during PPG. Linkages with downstream market actors will be established through the networks of SRP and WBCSD, including identification of off-takers for traceability and Chain of Custody.^[1]

3. WBCSD's members could be involved in the planning of the financial mechanism and in identifying projects, including with companies serving as aggregators to reach farmers, and in promoting sustainable, climate-resilient rice practices in their supply chains. Additionally, National Business Councils will also be engaged where relevant, including the Vietnam Business Council for Sustainable Development (VBCSD). The private sector can also play a role in sharing learning, e.g., through their participation in high-visibility events or sharing case studies.

4. During project preparation and implementation, the following private sector stakeholders will be engaged and/or consulted (see Table 3):

Table 3: Types of private sector that will be engaged and anticipated commitments

Type of private sector actor	Examples	Anticipated types of commitments during the project's implementation
Financial institutions	National and international financial institutions, banks, and micro-finance institutions that provide finance at different levels of the value chain, e.g., Cambodia's Agricultural and Rural Development Bank (ARDB), Bangladesh Bank, Vietnam Development Bank (VDB, a GCF accredited entity), Vietnam Bank for Agriculture and Rural Development (Agribank), etc.	Memoranda of Understanding (MoUs) or Letters of Intent to (1) serve as national financial institution partner to the Facility, (2) provide financing to the Facility, and/or (3) support capacity development.
Private investors	Private investors (individuals or funds)	Initial commitments to invest in the Facility
Suppliers	Input and service providers	Memoranda of Understanding (MoUs) or Letters of Intent to provide capacity building, provide affordable, high-quality inputs such as seeds and services, mechanised harvesting and post-harvesting processes, etc.
Producers	Cooperatives and farmer groups, micro, small and medium enterprises (MSMEs), smallholder farmers	Participation in training, expression of interest to participate in the project and/or in SRP certification
Processors	Collectors, brokers, millers and processors (national and subnational companies, state-owned companies)	Off-take agreements for SRP-verified/produced rice
Buyers	Traders and retailers (national or multi-nationals, national subsidiaries), e.g., Loc Troi, Amru Rice, Mars Food, Olam, etc. (including WBCSD members)	Off-take agreements for SRP-verified/produced rice, potential Letters of Intent for investments in climate-resilient value chains (pipeline development), provision of technical assistance/ training.

5. Additionally, the amount of private sector finance mobilized will be one of the indicators of success of the Facility.

^[1] The SRP Chain of Custody model ensures that verified product is kept separate from non-verified sources through each stage of the supply chain, enabling retailers to ensure that the ingredients contained in any product originate from verified sources.

5. Risks to Achieving Project Objectives

Indicate risks, including climate change, potential social and environmental risks that might prevent the Project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the Project design (table format acceptable)

1. An initial analysis of risks was conducted during project identification. The main identified risks and proposed mitigation actions are listed in the table below. No significant social and environmental risks were identified. A more detailed risk analysis and mitigation plan will be developed during project preparation.

Description of risk	Impact	Probability of occurrence	Proposed mitigation actions
1) The project is unable to make the necessary deals to secure financing and engage intermediaries	High	Low	? Initial discussions with potential partners and financiers have been very positive. The project will continue to tap into the SRLI partners' networks to mobilize potential financiers and intermediaries. Lessons learned from other similar funds including the AGRI3 fund and the Food Securities Fund will be taken into account.
2) Unable to identify eligible counterparts and pipeline of viable projects	High	Low	? The initial scoping and discussions held with SRLI partners and other value chain actors have already identified several potential counterparts and potential projects to be financed. More detailed analysis will be conducted during project preparation and implementation, accompanied with technical assistance to ensure that the necessary capacity is built among potential counterparts and intermediaries.
3) Political risks, changes in trade policy and regulatory environment	Moderate	Moderate	? The project will continue to carefully observe the political, policy and regulatory environment during project preparation and implementation, and political risks will be considered in the design of the financial mechanism. Currently, there are strong policies in place in all three target countries encouraging increased financing for adaptation (including private sector financing), and it is considered unlikely that this would change in the near future.

4) Market risks, price fluctuations	Moderate	Moderate	? Market risks and price fluctuations will be considered in the design of the financial mechanism. Lessons learned from value chain partners will also be taken into account.
5) Financial risks (interest rate risks, currency risks, credit/default risk)	Moderate	Moderate	? Consideration of financial risks is an integral part of the design of the financial mechanism and will be analysed in detail during project implementation. With regard to currency risks, the transactions of the financial mechanism are expected to be predominantly in USD.
6) Weather events such as droughts, floods, cyclones	High	High	? Crop losses and other impacts due to weather events are likely and may significantly impact the durability and profitability of the project's investments. The project will put in place measures to mitigate such risks, such as through crop insurance or by making sure that investments are climate-proof. These measures will be identified during project preparation and implementation.
7) Climate change	High	High	? Climate change is expected increase the likelihood, frequency and intensity of extreme weather events and will lead to reduced crop yields in some areas. The project's activities are designed to address these climate risks. A more detailed climate risk analysis is provided in the section below.
8) Legal and compliance	Moderate	Moderate	? Necessary legal and compliance analysis will be conducted as part of project implementation and establishment of the financial mechanism.
9) Structural, regulatory or policy risks	Moderate	Moderate	There is a risk that regulatory restrictions may limit investments in the rice sector, in particular related to rice exports. Initial analysis will be conducted during PPG and further elaborated as part of project implementation. Also, the project will work with local financial institutions already established and who have expertise in the country.

COVID-19 related risks

2. As noted above, the impact of the COVID-19 pandemic on food systems has exposed the vulnerabilities of supply chains throughout the world. In the Asia region, the slowing global economy has caused widespread job losses, falling incomes, and reduced remittances. The ongoing impacts of the COVID-19 pandemic and related restrictions are worsening the vulnerability of poor communities and has pushed more people into poverty. Furthermore, the COVID-19 pandemic related impacts have exacerbated the population's vulnerabilities, and this will stress household resilience as poverty is projected to increase. Despite the global economic downturn, agricultural production (including rice) has been relatively resilient. However, supply chains that ensure the flow from producers to consumers have been disrupted by movement restrictions.^[1]

3. Most governments in the region have responded with a range of social protection measures. These include cash transfers and unemployment benefits, provision of food in kind or through vouchers, wage subsidies, and waiver or postponement of utility bills. The project is well aligned with Bangladesh's post COVID-19 recovery plan. The country is keenly aware of the impacts of COVID on farmers and is positioning itself to respond strongly. Under the Eighth Five Year Plan (2021-2026), agricultural value chains will be strengthened to ensure food security post-COVID.

4. A recent rapid assessment of COVID-19's potential effects on agriculture and food security in Cambodia[2] found that COVID-19 is exacerbating many of the existing risks and vulnerabilities, such as poverty, high household debt, and inefficiencies in agricultural value chains. Many of the report's recommendations are directly supported by this project, such as increased sustainable production of rice, improved access to diversified financial resources, and improved agricultural market networks.

5. Vietnam's National COVID-19 Response Plan was first issued in January 2021, 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. It is anticipated that the proposed project will help to support the Government's response to COVID-19 through its focus on resilient rice-based livelihoods and value chains.

6. COVID-19 related risks and corresponding mitigation measures are summarized below.

Description of risk	Impact	Probability of occurrence	Proposed mitigation measures
<p>1) <i>COVID-19 continues to affect farmers and market actors' ability to implement effective agricultural value chains.</i></p> <p>COVID-19 related restrictions have significantly affected all aspects of food production, including agricultural trade and market systems, produce prices, and the quality and price of agricultural inputs.</p>	H	M-H	<p>The project builds on ongoing efforts by governments and development partners to support farmers and communities to address COVID-19 related issues in the short term, and to build resilience into rice-farming systems and value chains for the long term.</p> <p>The project will ensure close collaboration with private sector entities to understand ongoing constraints related to the pandemic and identify feasible options.</p>
<p>2) <i>COVID-19 restrictions lead to delays in project start-up and implementation, and reduced capability of the project to engage with local stakeholders.</i></p>	M	M	<p>During project preparation, meetings with national and local stakeholders can be organized online (as was done during PIF development). During implementation, if movement restrictions continue, the project will use alternative methods of engagement such as through local partners and offices.</p> <p>The project will continue to monitor the situation and implement adequate mitigation measures as required.</p>

<p>3) COVID-19 or similar future crises may lead to changing policy environment and may affect the availability of co-financing.</p>	<p>M</p>	<p>M</p>	<p>Rice and agriculture more generally are highlighted as key areas for strengthening resilience in various national plans and policies, including in the COVID-19 recovery plans, and it is not anticipated that this would change significantly in case of continued or similar future crises. Investments in rice value chains are not anticipated to be significantly reduced due to the pandemic. In turn, there is an opportunity for the project to directly contribute to a climate-resilient recovery to the COVID-19 pandemic through its investments in capacity and resilience building. By supporting access to financing for sustainable, climate-resilient investments and livelihoods and by strengthening farmer organizations and small and medium enterprises (SMEs), the project is aligned with governments' efforts to invest in COVID-19 recovery. The project will attract investments in a vital food crop focused on making agri-food systems more efficient, resilient and sustainable. This will be done within a context of integrated landscape planning and management and diversified farming and livelihood systems, that promote resilience to climatic and other shocks and reduce the risks of further zoonotic spillovers. Moreover, given the current inflationary pressures on food crops, the project will help to address working capital needs in the rice sector that have been exacerbated by the COVID-19 pandemic and current inflationary concerns, which make it more difficult for banks to lend.</p>
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Climate risks

7. A climate risk analysis was conducted during PIF development and is uploaded in the GEF Portal. The project is designed to build resilience to climate change in rice-dominated landscapes and, thus, address some of the identified climate risks. Safeguards and indicators will be put in place to ensure that all of the Fund's investments are climate-proofed and contribute to wider national and landscape level adaptation goals. A summary of the findings and recommendations of the climate risk analysis is provided below.

Summary of climate risk analysis and recommendations

8. On a scale of low, moderate, high, and very high, the climate risk within the project areas is high (Bangladesh and Vietnam) to very high (Cambodia) without project modulation, and moderate (Bangladesh and Vietnam) to high (Cambodia) with project modulation. Many of the hazards observed in the present are likely to intensify and gain in frequency into the future. As a result, the project areas and vulnerable socioeconomic groups are expected to be adversely affected by increasing extreme weather and climate events. Nevertheless, the proposed project activities are appropriate in terms of adaptation, and will certainly diminish the elevated risk, but are not sufficient to entirely mitigate the future risks along project areas.

9. Due to the projected changes in climatological trends in the mid to long term future within the Mekong Ganges, and Brahmaputra Delta, it is highly recommended that the historical changes and future projected climate data is incorporated as an integral part of the planned assessments and management plans in the project. During the PPG stage, it is recommended that climate change is fully integrated into all aspects of this project. In particular, the recommendations include:

? It is fundamental that rural areas are properly linked to urban center and market areas through provincial and national roads. Hence, food value chains that are competitive require sustainable and efficient transportation and infrastructure systems.

? Disseminate best storage practices across value chains.

? There are numerous barriers to the development of climate services along the food value chain including (i) the need for reliable data, (ii) limited technology and innovation, (iii) heterogeneity of agri-food value chains, (iv) lack of communication and capacity building, (v) lack of investment in climate adaptation, (vi) limited policy support.

? Strengthen social protection systems and foster climate resilient certification schemes to underscore the return on investment.

? Integrate climate risk assessments into project design and business plans for agri-food value chains.

? Improving access and use of weather-informed agricultural advisories will invariably support women and youth in exploring entrepreneurial and economic opportunities in climate smart agriculture.

? Build the capacity of value chain actors to use climate services and communication tools.

Environmental and social risks

10. An initial environmental and social risk screening was conducted during PIF development. The project has been assessed low risk and the ESS risk certification has been uploaded to the GEF Portal. A more detailed analysis will be conducted during PPG. During implementation, the project will develop Environmental, Social and Governance (ESG) criteria for the financing mechanism. Under Output 3.1, the project will analyse safeguards issues for the financial mechanism and develop an ESG policy and a gender-responsive results framework. It will also develop a gender mainstreaming plan, stakeholder engagement plan, an accountability and grievance mechanism and other safeguard documents for the Facility in line with FAO, GEF and potential donor requirements. The project can also build on SRP Performance Indicator 11 on Child Labor and Youth Engagement and its Child Labor and Youth Inclusion Scorecard, and SRP Performance Indicator 12 on Women empowerment and its Women's Empowerment Scorecard.

[1] FAO. 2020. *Impacts of coronavirus on food security and nutrition in Asia and the Pacific: building more resilient food systems*. Bangkok. <https://doi.org/10.4060/ca9473en>

[2] MAFF, CARD, and FAO. 2020. *Rapid Assessment of COVID-19 Impact on Agriculture and Food Security in Cambodia*. Phnom Penh, FAO.

6. Coordination

Outline the institutional structure of the project including monitoring and evaluation coordination at the project level. Describe possible coordination with other relevant GEF-financed projects and other initiatives.

6.a Institutional arrangements

1. The Food and Agriculture Organization of the United Nations (FAO) will be the GEF implementing agency of the project. It is anticipated that the project will be executed by the World Business Council for Sustainable Development (WBCSD) in collaboration with other partners, including relevant Government agencies in the three target countries, to be further consulted with stakeholders during the project preparation phase. The executing agencies will collaborate closely on project implementation with other SRLI members[1], taking advantage of their technical capacities and their global/regional influence among public and private sector communities. Additionally, an entity with investment and private sector capital mobilization capabilities (and GCF accreditation), which will act as the fund manager, will be identified during project preparation and implementation. Other stakeholders will be involved in the project implementation as described in *Section 2. Stakeholders*.

2. A Project Steering Committee (PSC) will be established to provide strategic guidance and take decisions related to the project implementation including approval of project plan, budget and revisions. The PSC will meet twice a year, or more frequently as necessary. The PSC members will be detailed during the PPG phase. A Project Management Unit (PMU) will be established and will be tasked with the day-to-day management of the project activities, as well as with financial and administrative reporting.

6.b Coordination with other projects

a. Linkages with GEF-7 projects (FOLUR and LDCF)

3. The proposed project links closely with the following GEF-7 projects developed under the Least Developed Countries Fund (LDCF) and the GEF-7 Food Systems, Land Use and Restoration (FOLUR) Impact Program. The project will collaborate closely with these initiatives to achieve mutually reinforcing outcomes and avoid duplication.

4. In particular, the **GEF-7 FOLUR Global Knowledge to Action (K2A) Platform** project aims to mobilize additional finance for sustainable production approaches. In close coordination with the FOLUR country projects, this project will engage public and private sector actors on policies, practices, analyses and financing toward sustainability outcomes. Activities include organizing and delivering investor finance forums at region and commodity level, including challenge dialogues, adoption of standards, Principles for sustainable investment, etc.; providing matchmaking/brokering for a few key opportunities; developing and promoting financial innovations, e.g., outreach to banks, impact investors and commodity-based funds.

5. The three GEF-7 country projects to which the proposed project links most closely are described below.

Box 4: Bangladesh GEF-7 LDCF project

6. The FAO GEF-7 LDCF **Building Climate Resilient Livelihoods in Vulnerable Landscapes in Bangladesh (BCRL)** project (GEF ID 10207, USD 8.9 million in GEF funding) aims to improve the resilience of people, communities, and ecosystems to climate change, and improve livelihoods through increased value addition in the agricultural food systems of Bangladesh. The project intends to reduce vulnerability of three climate-impacted landscapes of Bangladesh, i.e., the High Barind Tract (HBT), Chittagong Hill Tracts (CHT), saline and waterlogging-prone areas. Among others, the project aims to establish market linkage and value chains and developing innovative financial instruments, as well as crop specific early warning system. The three prioritized crops targeted by the project are watermelon, maize and dragon fruits.

7. Among others, under its Component 1, the project will promote innovative financial instruments, investment models, and institutional setup to mobilize climate finance for resilient agriculture in Bangladesh. Under Component 2, it aims to improve uptake by farmers of climate-resilient crops, varieties, and management practices through transfer of seed kits and other inputs. Under Component 3, the project will strengthen value chains and farmer organizations, and will design, pilot and scale innovative financial instruments that provide access to credit for farmers, entrepreneurs, and micro, small and medium enterprises (MSMEs).

8. While rice is a dominant crop in these landscapes, diversification is increasingly recognized as a driver for enhancing resilience to both environmental and market vulnerabilities. For example, diversifying HBT's rice cropping areas with high value non-rice crops such as maize and horticulture that require less water and varieties that are stress-tolerant to the environmental conditions of HBT will be key to climate change adaptation in the region.[2]

9. During the preparation phase of this project, the project design team met with Bangladesh Bank to discuss potential for collaboration for developing a climate-resilient lending portfolio.

Box 5: Cambodia GEF-7 LDCF project

10. The FAO GEF-7 LDCF **Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region** project (GEF ID 10177, USD 8.9 in GEF financing) aims to reduce climate vulnerability and increase resilience to climate change of rice-based communities in the Tonle Sap region of Cambodia through an ecosystem-based, market-driven approach. The project will work in the five provinces around Tonle Sap Lake—Pursat, Battambang, Banteay Meanchey, Siem Reap, and Kampong Thom—which is one of Cambodia’s two major rice-growing regions. The area is predominantly rain-fed (very low access to irrigation) and has communities with particularly high vulnerabilities and low adaptive capacities to climate change.^[3]

11. PPG consultations with various processors—e.g., Amru Rice and BRICo—have reconfirmed broad support from domestic processors for such standards, technical assistance, policy adjustments, and local investments that help to improve the reliability, quality, consistency, and marketability of crops, especially rice. Additionally, ongoing consultations with Mars Food Group similarly indicate dedicated and growing support for sustainability standards such as SRP, which help to improve local sustainability, increase climate resilience for producers and upstream production, increase product quality and marketability, and contribute to corporate sustainability targets.^[4]

12. Under Component 1, the project will improve capacities of Cambodia’s Agricultural and Rural Development Bank (ARDB) and relevant decision-makers in MAFF and MoE to enable and secure financing for climate-resilient agricultural technologies, practices, and associated value chains. Similarly, the project will capacitate relevant decision-makers in MAFF and MoE to identify and support opportunities for blended financing of climate-resilient approaches in the agricultural sector. These capacity-development activities also link directly with the process of evaluating and funding Community-led Resilience Investment Packages (CRIPs) under Component 2 and value-chain investments under Component 3.

13. Additionally, under its Components 2 and 3, the project will improve access to credit for rice farmers and rice processors. It will also demonstrate and scale up contract farming models between agricultural cooperatives and rice processors, incorporating crop insurance. It will pilot locally prioritized standards-based production (including SRP), and will enhance post-harvest handling, collection, storage, and drying facilities at the processor level. Finally, the project will assist agricultural cooperatives and producer groups in developing medium-term business plans for increasing support to locally prioritized climate-adaptive approaches using the FAO RuralInvest tool.

Box 6: Viet Nam GEF-7 FOLUR project

14. The FAO GEF-7 **Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam** (GEF ID 10245, USD 5.3 in GEF funding) aims 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.

15. Together with private sector partners, farmer organizations and Government, the project will facilitate the leverage of environmental benefits through 'green value chains' and the application of environmental sustainability standards such as the SRP Standard complemented by other standards of sustainability at community and landscape levels addressing issues including nature-based solutions and agroecology.

16. Under its Outcome 2.1, the project will facilitate access to financing services for farmers. As a result of the project, 15,000 farmers (of whom 10% are ethnic minorities and 30% are women) will be able to access the technical and financial support they need to adopt agricultural practices and natural resource management that contributes to ILM and global environmental benefits (GEBs). Additionally, at least three cooperatives or agribusinesses will have improved access to financing (e.g., through WBCSD, AGR13 Fund, DFCD) for sustainable production.

17. The project aims to partner with Olam (a global rice trading company) and Loc Troi (the largest rice corporation in Vietnam, and a significant source of co-financing for this project) to consolidate and scale out the value chain-based model promoted by the project.

18. 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 is a core partner of the World Bank-led Global Platform. Furthermore, the project will develop opportunities for partnership and leverage with UN Environment Programme and the Dutch multinational banking and financial services company Rabobank, under the recently launched global Forest Protection and Sustainable Agriculture partnership. 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.

b. Linkages with other GEF and non-GEF initiatives

19. Linkages and coordination with other relevant GEF and GCF projects and other initiatives are summarized in the table below. Coordination will be ensured through FAO, relevant SRLI partners, and Government ministries.

Programme	Linkages with the project
<i>Global / regional</i>	

<p>1) Conservation International GEF-7 Non-Grant Instrument (NGI) Project The Food Securities Fund: A fund to finance sustainable supply chains at scale in emerging and developing markets (GEF ID 10322). The Food Securities Fund aims to improve rural livelihoods and achieve positive environmental outcomes by supporting sustainable agriculture production systems in emerging and developing markets with a complementary source of credit, provided in partnership with companies committed to sustainable development in their sourcing areas. The Food Securities Fund intends to coordinate with government and agency leads executing FOLUR projects in countries where overlaps exist. Within the GEF commitment period, the Food Securities Fund intends to target the following initial FOLUR cohort countries and sectors:</p> <ul style="list-style-type: none"> ? Palm oil in Indonesia and Liberia, with the potential for including Peru; ? Cocoa in Cote d'Ivoire, Ghana, and potentially Indonesia, Peru and Colombia; ? Coffee in Burundi and Ethiopia, with the potential for including Indonesia, Colombia, Peru, Guatemala and Mexico; and ? Soy, notably in Brazil and potentially Argentina and Paraguay. <p>The Food Securities Fund may also consider investment opportunities in the rice sector in Indonesia and Vietnam.</p>	<p>The proposed project will closely exchange with the CI NGI project, in particular to build on lessons learned and avoid overlap and duplication with the investments of this fund, as well as explore opportunities to co-invest.</p>
<p>2) FAO LDCF/SCCF Challenge Program projects (in development):</p> <ul style="list-style-type: none"> ? Net-Zero Adaptation Finance, with Winrock International ? Scaling Financial and Information Services for Smallholder Adaptation, with CIAT ? Acceleration of Fintech Enabled Climate Resilience Solutions, by UNIDO with BFA Global ? Certification of NbS Portfolios of Inclusive Financial Service Providers for Scaling CCA and Biodiversity Finance for small-holder farmers, by IFAD and BNP Paribas ? Indicators Framework for CCA and Biodiversity Conservation Finance for Smallholders: Leveraging private and public finance, by IFAD and Fondation Grameen Credit Agricole 	<p>Exchange of lessons learned will be sought during the development and implementation of these two projects.</p>
<p>3) ADB GCF FP156: ASEAN Catalytic Green Finance Facility (ACGF): Green Recovery Program (mitigation).^[5] The ACGF GRP will help targeted ASEAN developing member countries (including Cambodia, Indonesia, Lao PDR, Malaysia and Philippines) to prioritize post-COVID infrastructure investments that have high climate-positive / green impacts, are bankable and that mobilize private capital. In addition to the energy, transport, and urban sectors, the facility will fund projects in the Sustainable agriculture and natural resources sector, such as reforestation, agroforestry projects, and soil carbon sequestration.</p>	<p>The proposed project will exchange and coordinate with this program to enhance synergies, exchange knowledge and lessons learned, and avoid duplication.</p>
<p>4) FP151-152: Global Subnational Climate Fund (SnCF Global) and Technical Assistance (TA) (IUCN and Pegasus Capital Advisors) (mitigation). The SnCF is a multi-country Fund that is set to invest in up to 20 countries (including for Asia-Pacific: Cambodia, Fiji, Indonesia and Myanmar) through a blended public-private finance facility. The aim is to catalyse climate resilient, low carbon infrastructure as a new asset class in mid-size, infrastructure for private capital.^[6]</p>	<p>The proposed project will aim to build on lessons learned of this project in terms of establishment of a multi-country fund involving GCF investment.</p>

<p>5) FAO is leading several GEF Capacity-building Initiative for Transparency (CBIT) projects globally and in the region, assisting countries in developing their MRV systems, in particular in the agriculture sector. Notably, FAO is currently implementing two global CBIT projects, (i) Global capacity-building products towards enhanced transparency in the AFOLU sector (CBIT-AFOLU); and (ii) Building global capacity to increase transparency in the forest sector (CBIT-Forest). Additionally, FAO is implementing national CBIT projects in Afghanistan, Bangladesh, Cambodia, Mongolia, Papua New Guinea, and Sri Lanka.</p>	<p>The proposed project will build on the MRV systems developed under the CBIT projects for its monitoring and evaluation component.</p>
<p>6) FAO in collaboration with UNDP and funding from the German Ministry of Environment, Nature Conservation and Nuclear Safety (BMU) through its International Climate Initiative (IKI), is implementing the global Support Programme on Scaling up Climate Ambition on Land Use and Agriculture through NDCs and NAPs (SCALA) programme. The programme supports 4 countries in Asia including Cambodia, Mongolia, Nepal and Thailand to translate their NDC and/or NAPs into actionable and transformative climate solutions in land-use and agriculture with multi-stakeholder engagement. It emphasizes collaboration between the public and private sectors to drive implementation and addresses several cross-cutting issues.</p>	<p>The proposed project will coordinate activities on private sector engagement for NDC implementation and agrifood system transformation in Cambodia and facilitate the sharing of lessons learned regionally and globally.</p>
<p><i>Bangladesh</i></p>	
<p>1) UNDP GEF-6 LDCF Integrating Climate Change Adaptation into Sustainable Development Pathways of Bangladesh.[7] This project will have the following outcomes: (1) Enhanced capacity with improved coordination mechanisms, databases and knowledge management systems at relevant ministries and line agencies to integrate climate change adaptation into national & sub-national/local levels; (2) Adaptation options assessed and prioritized for all selected Agro-Ecological Zones (AEZs); (3) Adaptation options implemented in selected AEZs. Among others, the project will support communities and institutions to innovate technologies and have access to finance and knowledge for making shift towards climate resilient livelihoods and settlements.</p>	<p>The proposed project will exchange with this LDCF project and will aim to build on its outcomes by providing financing for identified adaptation options.</p>

<p>2) A Bangladesh GCF Country Programme (2018) has been developed.[8] The proposed pipeline includes a project on ?Climate Resilient Agriculture for the Climate-Vulnerable Regions of Bangladesh? and one on ?Community Based Bio-organic Fertilizer Production for Improvement of Soil health and Reduction of GHG Emission due to Use of Chemical Fertilizer in Rice Cultivation?, among others. Bangladesh has two Direct Access Accredited Entities, the Infrastructure Development Company Limited (Bangladesh) (IDCOL) and the Palli Karma-Sahayak Foundation (Bangladesh) (PKSF).[9]</p> <p>GCF adaptation projects under implementation in Bangladesh include (selection):</p> <ul style="list-style-type: none"> ? FP004: Climate-Resilient Infrastructure Mainstreaming in Bangladesh (KfW) ? SAP008: Extended Community Climate Change Project-Flood (ECCCP-Flood) (PKSF) ? FP069: Enhancing adaptive capacities of coastal communities, especially women, to cope with climate change induced salinity (UNDP) ? Readiness Proposal with Bangladesh Bank, ?Up scaling regulatory landscape of Green Banking for Shariah Based Banks and Financial Institutions in Bangladesh?. 	<p>The proposed project will exchange closely with the GCF projects under development and implementation in Bangladesh, in particular those related to climate-resilient agriculture and sustainable financing.</p>
<p><i>Cambodia</i></p>	
<p>1) GCF Readiness Proposal with Mekong Strategic Partners, ?Design of a Cambodian Institution for Green Financing? (approved readiness proposal, adaptation and mitigation). The project will support the development of a catalytic financial institution for green financing. The Cambodian Institution for Green Financing will be a financial institution (such as a private fund, a bank or a Government fund, or any other suitable combination), supporting the development of Green businesses, as well as incentivizing the Cambodian banking sector to participate and support the development of a Green economy in Cambodia. ^[10] Examples of adaptation projects include, agriculture and forestry projects which promote climate resilience, transportation systems, irrigation systems to support improved water resource management to protect against increased flooding and droughts due to climate change, or piped water systems to increase access to water where climate change is increasing access difficulty.</p>	<p>The proposed project will exchange with this project, in order to build on lessons learned, create synergies and avoid duplication with the future investments of this financial institution, as well as explore opportunities to co-invest.</p>
<p>2) FAO GCF Public-Social-Private Partnerships for Ecologically-Sound Agriculture and Resilient Livelihood in Northern Tonle Sap Basin (PEARL) (in preparation) (adaptation). The project will enhance the climate resilience of farmers and farming communities in the Northern Tonle Sap Basin by (i) improving agrometeorological forecasting and related advisory services; (ii) raising awareness of climate-related risks and climate-resilient agricultural options; (iii) increasing options for climate-adapted, sustainable, higher-value, and diversified agriculture; (iv) improving farming and environmental management practices; and (v) improving the associate enabling environment via policies, capacities, and institutional coordination.</p>	<p>The proposed project will seek linkages and synergies with this project, in particular to identify potential value chain partners and beneficiaries.</p>

<p>3) The World Bank-funded Cambodia Sustainable Landscape and Ecotourism Project (2019-2025, USD 55.6 million) is implemented by the Ministry of Environment and Ministry of Rural Development and aims to improve protected areas (PAs) management and to promote ecotourism opportunities and non-timber forest product value chains in the Cardamom Mountains-Tonle Sap landscape. The project comprises the following five components: (1) Strengthen Capacity for PAs Landscape Planning and Management; (2) Strengthen Opportunities for Ecotourism and NTFP Value Chains; (3) Improve Access and Connectivity; (4) Project Management, Coordination, and Monitoring and Evaluation; and (5) Contingent Emergency Response.^[11]</p>	<p>The proposed project will build on the investments and experiences of this project, in particular related to improved access and connectivity and value chains.</p>
<p>4) ADB GCF FP076: Climate-Friendly Agribusiness Value Chains Sector Project (under implementation) (mitigation and adaptation).^[12] Aims at reducing greenhouse gas emissions and the climate vulnerability of Cambodia's agricultural value chains.^[13] The project will support the deployment of a farmer-oriented training program on CSA^[14], reaching at least 40,000 farmers (of which at least 40% will be women), focusing on the rice, cassava, maize and mango value chains. The project will prepare training manuals and materials for SRP standards for sustainable rice cultivation, for CSA, and for CAMGAP for tropical fruit. Finally, the project will also promote green finance and risk sharing mechanisms. Under this Activity, the project will support dialog between public and private sector stakeholders at the national level by <i>convening an inter-ministerial committee and promoting the establishment of crop-centric PPP forums for each value chain</i>. To further encourage climate-friendly private sector engagement and to orient the market towards 'greening' the value chains, <i>the project will strengthen the capacity of financial institutions to devise and channel climate-friendly agribusiness investments</i>.</p>	<p>The proposed project will closely exchange with this project, in order to build on its achievements in relation to the SRP standard and capacity development of financial institutions.</p>
<p><i>Viet Nam</i></p>	
<p>1) ADB GEF-7 Financing Agrochemical Reduction and Management (FARM) in Agri-Food Value Chains, executed by the Ministry of Agriculture and Rural Development (project under development). This is a child project under the GEF UNEP Financing Agrochemical Reduction and Management (FARM) Programme. Under its Output 1.1 the project intends to conduct a regulatory/legal and capacity gap analysis at central/provincial level with respect to 'green' finance (including green metrics, 'eco-compensation' etc.) linked to agrochemicals lifecycle management. Under Output 2.1, it intends to establish a 'Green finance framework' for agri-foods industry/the horticulture sector in Vietnam, to include options and modalities for sustainable finance and investment, including 'eco-compensation'.</p>	<p>The proposed project will seek to exchange and coordinate with this project, in particular related to the green finance framework and the ESG principles.</p>
<p>2) The AgResults Vietnam Greenhouse Gas Emissions Reduction Pilot (AVERP)[15] is a four-year, US\$8 million, results-based financing project that aims to reduce greenhouse gas emissions, increase rice yields and help overcome market barriers to scaling.^[16] To date it has led to huge scaling of low carbon rice production methods (i.e. AWD+++)^[16] in Thai Binh (Red River delta). AVERP focuses exclusively on solutions that aim to reduce emissions during land preparation and cultivation of rice as most emissions occur during these stages. Results in terms of yield increases and emission reductions are verified independently and transparently by Applied Geo-Solutions, co-monitored by SNV and the Thai Binh Provincial Department of Agriculture and Rural Development.^[17]</p>	<p>The project will build on the lessons learned of this project related to the results-based financing.</p>

<p>3) The Dutch Fund for Climate & Development (DFCD)[18], 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, including climate-resilient water systems and freshwater ecosystems, forestry, climate-smart agriculture, and restoration of ecosystems to protect the environment. Globally, it is foreseen that EUR 160 million of DFCD funding will directly mobilize between EUR 500 million ? EUR 1 billion in institutional and other commercial capital during the lifetime of the DFCD. One of its first priorities in Vietnam will be to develop a bankable investment project to expand organic/sustainable shrimp production with >50% mangrove cover on farms along the coast in Ca Mau, Ben Tre, Tra Vinh and potentially other provinces.</p>	<p>The project will build on the lessons learned of this project related to the development of bankable investment projects</p>
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[1] SRLI is a partnership between WBCSD, the UN Environment Programme (UNEP), FAO, the Sustainable Rice Platform (SRP), the German Agency for International Cooperation (GIZ) and the International Rice Research Institute (IRRI).

[2] Bangladesh GEF-7 LDCF Project Document, ?Building Climate Resilient Livelihoods in Vulnerable Landscapes in Bangladesh (BCRL)? (GEF ID 10207).

[3] The five-year project will be delivered jointly by the Ministry of Agriculture, Forestry, and Fisheries (MAFF) and the Ministry of Environment (MOE), with technical support provided by GIZ, IRRI, and the Wildlife Conservation Society (WCS).

[4] Cambodia GEF-7 LDCF Project Document ?Promoting Climate-Resilient Livelihoods in Rice-Based Communities in the Tonle Sap Region? (GEF ID 10177).

[5] <https://www.greenclimate.fund/document/asean-catalytic-green-finance-facility-acgf-green-recovery-program>

[6] <https://www.greenclimate.fund/document/global-subnational-climate-fund-sncf-global-equity>

[7] <https://www.thegef.org/project/integrating-climate-change-adaptation-sustainable-development-pathways-bangladesh>

[8] <https://www.greenclimate.fund/document/bangladesh-country-programme>

[9] <https://www.greenclimate.fund/countries/bangladesh>

[10] <https://www.greenclimate.fund/document/strategic-frameworks-support-cambodia-through-mekong-strategic-partners>

[11] <https://projects.worldbank.org/en/projects-operations/project-detail/P165344>

[12] <https://www.greenclimate.fund/project/fp076> and <https://www.adb.org/projects/48409-002/main>

[13] <https://www.greenclimate.fund/story/cambodia-s-climate-action-game-changer-resilient-agricultural-value-chains>

[14] Including laser land levelling, alternate wetting and drying, sustainable agricultural waste management, rational use of inputs (water, energy fertilizers, and pesticides), agro-forestry and soil cover maintenance techniques, anti-erosive landscaping, as well as other modern practices that result in reduction of GHG emissions from cropping, and the practical applications relating to standards compliance.

[15] <https://snv.org/project/averp-agresults-vietnam-emissions-reduction-pilot>

[16] AgResults is a USD 152 million multilateral initiative that uses Pay-for-Results prize competitions to incentivize, or ?pull?, the private sector to overcome agricultural market barriers by investing in

innovative research and delivery solutions that improve the lives of smallholder farmers.
<https://agresults.org/>

[17] Vietnam GEF-7 Project Document, ?Integrated Sustainable Landscape Management in the Mekong Delta of Vietnam? (GEF ID 10245).

[18] <https://www.fmo.nl/l/en/library/download/urn:uuid:58080e05-ba8a-444b-bfc8-cad3a8b21ac6/executive+summary+dfcd.pdf>

7. Consistency with National Priorities

Is the Project consistent with the National Strategies and plans or reports and assessments under relevant conventions?

Yes

If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc

1. Four of the world's ten largest rice producers refer specifically to rice in their **updated NDCs** (Bangladesh, China, Myanmar and Viet Nam). Overall, 24 countries globally mention rice (adaptation and/or mitigation) in their new or updated NDCs, compared to 18 in the previous NDCs.^[1] As for the three target countries and rice actions included in their NDCs, Bangladesh refers to mitigation only, Cambodia to adaptation only, and Viet Nam to both mitigation and adaptation.

2. Bangladesh's updated NDC sets specific targets to reduce methane emissions from rice and commits to scaling up Alternate Wetting and Drying (AWD) in at least 20% of rice production by 2030.^[2] Cambodia's updated NDC includes adaptation actions such as the development of rice crops for increased production, improved quality and safety; harvesting and post harvesting technique and agrobusiness enhancement; as well as improvement of support services and capacity building to crop production resilient to climate change.^[3] Viet Nam's updated NDC includes measures such as replacing long-duration rice varieties with short-duration ones, increasing areas with mid-season water drainage and alternating wet and dry irrigation techniques, and increasing areas with integrated crop management (ICM) or areas with the ?3 decrease 3 increase (3G3T)? and ?1 must 5 decrease (1P5G)?.^[4] Additionally, all three countries' updated NDCs explicitly refer to the market mechanisms under Article 6 of the Paris Agreement, paving the way for potential future voluntary payments under the Internationally Transferred Mitigation Outcomes (ITMOs). Further details on relevant national strategies and plans are provided below.

National plan	Linkages with the project
<i>Bangladesh</i>	
1) Bangladesh Nationally Determined Contribution (2015) and updated NDC (2021)	The proposed project directly contributes to the targets set out in Bangladesh's NDC. One of the priority adaptation activities included in its NDC in 2015 was ?Stress tolerant (salinity, drought and flood) variety improvement and cultivation (including livestock and fisheries)?. Bangladesh's updated NDC sets specific targets to reduce methane emissions from rice and commits to scaling up Alternate Wetting and Drying (AWD) in at least 20% of rice production by 2030. With regard to adaptation, it refers to the National Adaptation Plan (NAP) currently under development, as well as the NAPA and BCCSAP described below.
2) National Adaptation Plan (NAP) Process initiated in 2019	The project is expected to directly contribute to the adaptation priorities that will be defined in the NAP. ^[5]

3) Bangladesh Third National Communication to the UNFCCC (2018)	The proposed project is consistent with the following areas of intervention and adaptation actions outlined in Bangladesh's Third National Communication to address the adverse impacts of climate change: [6] - Food security, livelihood and health protection (including water security). - Development of climate resilient cropping systems. - Development and dissemination of stress tolerant (salinity, drought and flood) varieties of rice; improved varieties of livestock and fisheries.
4) Climate Change Strategy and Action Plan (BCCSAP) in 2009	The project will contribute to the following programmes of the BCCSAP: 1. Food security, social protection and health 1.1 Increase the resilience of vulnerable groups, including women and children, through development of community-level adaptation, livelihood diversification, better access to basic services and social protection (e.g., safety nets, insurance) and scaling up. 1.2 Develop climate change resilient cropping systems (e.g., agricultural research to develop crop varieties, which are tolerant of flooding, drought and salinity, and based on indigenous and other varieties suited to the needs of resource poor farmers), fisheries and livestock systems to ensure local and national food security.
5) National Adaptation Programme of Action (NAPA) 2005 (updated 2009)	The project contributes to the following adaptation measures outlined in the NAPA: 1. Develop climate change resilient cropping systems (e.g., agricultural research to develop crop varieties, which are tolerant of flooding, drought and salinity, and based on indigenous and other varieties suited to the needs of resource poor farmers), fisheries and livestock systems to ensure local and national food security. 2. Introduce and scale up existing innovative technologies to deal with flood, drought and salinity.
6) Eighth Five-Year Plan of Bangladesh, FY2020 ? FY2025	The proposed project contributes to the following strategies outlined in the Eighth Five-Year Plan: <i>Strategy for Agriculture and Water Resource Management:</i> 1. To extend credit facilities to farmers through banks and other financial institutions at a low rate of 2 per cent. 2. Minimising the impact of the COVID-19 pandemic 3. Introduction and popularization of Good Agricultural Practices (GAP) 4. Promote measures to expand mechanization and value chain development 5. Post-harvest management 6. Increasing women and youth participation in agriculture <i>Social Protection, Social Welfare and Social Inclusion, Food Security and Nutrition:</i> 1. Maintaining agricultural growth 2. Increasing storage capacity and modernization
<i>Cambodia</i>	
1) Cambodia Nationally Determined Contribution (NDC) (2015) and updated NDC (2021)	The proposed project is consistent with Cambodia's NDC. The priority adaptation actions in the NDC include, among others, promoting an agroecological transition in the uplands of Battambang; the development rice crops, horticulture and other food crops for increased production, improved quality-safety; harvesting and post harvesting technique and agro-business enhancement; and the development of new technologies and increased yields by using new crop varieties adapted to climate change. The updated NDC also indicated detailed technology needs in the agricultural sector for climate smart practices, ranging from stress-tolerant varieties to systems of rice intensification to integrated pest management and integrated soil and nutrient management.[7]

2) National Adaptation Programme of Action to Climate Change (NAPA) (2006)	The project is consistent with the priorities identified in the NAPA, in particular: 1. Development and Improvement of Community Irrigation Systems 2. Improving Farmers' Adaptive Capacity to Climate Change
3) Cambodia Climate Change Strategic Plan (CCCSP) 2014-2023 and sectoral Climate Change Action Plans (CCAPs)	The project contributes, among others, to the following priorities identified in the Agriculture, Forestry and Fisheries Sector CCAP: ^[8] 1. Promoting and upscaling sustainable farming system that is resilient to climate change 2. Promote post-harvest technology for cereal and tuber crops
4) National Adaptation Plan Process in Cambodia (2017) National Adaptation Plan Financing Framework and Implementation Plan (2017)	The project is consistent with the following NAP objectives and priority actions in Cambodia, building on the thematic objectives and priorities of the CCCSP and the sectoral climate change action plans: 1. To promote climate resilience through improving food, water and energy security. 2. To reduce sectoral, regional, gender vulnerability and health risks to climate change impacts.
5) General Secretariat of National Council for Sustainable Development (2016). Promoting Private Sector Contributions to the Climate Change Response in Cambodia.	The proposed project is consistent with the following recommendations aimed at strengthening the private sector response to climate change in Cambodia. ? #13 Reinforce resilience of small producers through training and market consolidation ? #14 Build a resilient agriculture/fishery supply chain ? #20 De-risk green lending to SMEs and households: Explore feasibility of a national guarantee fund (or facility). ? Encourage economies of scale through farmers association (irrigation, purchase agreement, supply chain)
<i>Viet Nam</i>	
1) Viet Nam Nationally Determined Contribution (NDC) (2015) and updated NDC (2021)	The proposed project is consistent with the priority adaptation and mitigation measures outlined in Viet Nam's NDC. Viet Nam's updated NDC includes measures such as replacing long-duration rice varieties with short-duration ones, increasing areas with mid-season water drainage and alternating wet and dry irrigation techniques, and increasing areas with integrated crop management (ICM) or areas with the '3 decrease 3 increase (3G3T)' and '1 must 5 decrease (1P5G)'.
2) National Adaptation Plan (NAP) process: currently ongoing, started in 2021	The project is consistent with the objectives of the National Climate Change Adaptation Plan including to: (i) Reduce vulnerabilities to climate change impacts, by enhancing adaptive capacity and resilience; (ii) Enhance the integration of climate change adaptation actions into relevant policies, strategies, programs and projects, especially in socio-economic development planning of ministries, branches and localities.

3) Vietnam Third National Communication to the UNFCCC (2018)	In the TNC, Vietnam identified a number of gaps and needs in responding to climate change. This includes, among others, the development of criteria for monitoring and evaluation of climate change adaptation actions; and adopting technologies on sustainable agricultural, forestry and fishery production. The proposed project contributes to addressing these gaps.
4) National Strategy for Climate Change (2011)	The proposed project will contribute to the following objectives of the National Strategy for Climate Change: (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 (ii) Raising awareness, responsibilities and capacity to respond to climate change of stakeholders.

[1] CCAFS (2021). Rice cultivation ambition in the new and updated Nationally Determined Contributions: 2020-2021.

<https://ccafs.cgiar.org/resources/publications/rice-cultivation-ambition-new-and-updated-nationally-determined>

[2]

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Bangladesh%20First/NDC_submission_20210826revised.pdf

[3] CCAFS (2021).

[4] The Socialist Republic of Viet Nam (2020). Updated Nationally Determined Contribution (NDC).

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Viet%20Nam%20First/Viet%20Nam_NDC_2020_Eng.pdf

[5] <https://www.bd.undp.org/content/bangladesh/en/home/projects/national-adaptation-plan--nap-.html>

[6]

https://unfccc.int/sites/default/files/resource/TNC%20Report%20%28Low%20Resolution%29%2003_01_2019.pdf

[7]

https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Cambodia%20First/20201231_NDC_Update_Cambodia.pdf

[8] <https://portal.gms-eoc.org/uploads/resources/1997/attachment/ccap-agriculture-forestry-fisheries-2014-2018-en-final.pdf>

8. Knowledge Management

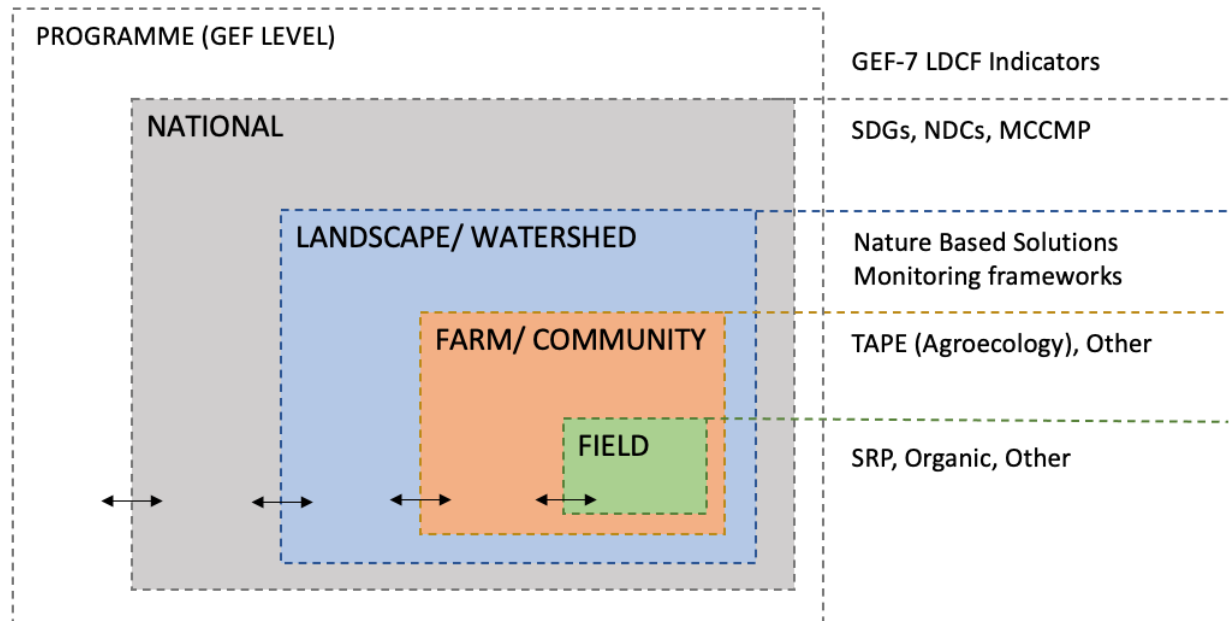
Outline the knowledge management approach for the Project, including, if any, plans for the Project to learn from other relevant Projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.

1. Knowledge management will be addressed in Component 3 of the project. Under Output 3.1, the project will identify and establish adaptation metrics and key performance indicators (KPIs) for program M&E, impact and Environmental, Social and Governance (ESG) monitoring of the financial mechanism. These will enable the fund to generate data and knowledge on the impacts of the fund. Under Output 3.2, knowledge related to the establishment and implementation of the financial mechanism will be captured and shared with relevant stakeholders nationally and regionally to support adaptive learning, replication and scaling up. In this way, the project will promote exchange of knowledge and information with national governments, financial intermediaries, value chain

partners/counterparts/borrowers, and farmers organizations. At the beginning of the project, a KM and communications strategy will be developed.

2. By collaborating with the wider knowledge management efforts under the Sustainable Rice Landscapes Initiative (SRLI), the Facility will contribute to a larger body of knowledge. SRLI's M&E and Knowledge Management System (KMS) builds on the ICRISAT MEASURE (Monitoring and Evaluation of Agri-Science Uptake in Research and Extension) platform. It aims to capture indicators at various levels, including the SRP Performance Indicators, FAO's Tool for Agroecology Performance Evaluation (TAPE), national-level indicators, as well as the Sustainable Development Goals (SDGs), as shown in Figure 8 below.

Figure 8: Draft indicator framework for SRLI projects



3. The relevant initiatives that the project builds on and intends to learn from through its knowledge management mechanisms are mentioned in *Section 2) Baseline scenario* and *Section 6.b Coordination*. These include, in particular, the AGRI3 fund, the Food Securities Fund, Winrock's Net-Zero Adaptation Finance, and the ASEAN Catalytic Green Finance Facility. Additionally, through the regional SRLI initiative, the proposed project will also exchange and build on lessons learned of Thailand's Bank for Agriculture and Agricultural Cooperatives (BAAC).

9. 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
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Low

Measures to address identified risks and impacts

Provide preliminary information on the types and levels of risk classifications/ratings of any identified environmental and social risks and potential impacts associated with the project (considering the GEF ESS Minimum Standards) and describe measures to address these risks during the project design.

Environmental and social risks

1. An initial environmental and social risk screening was conducted during PIF development. The project has been assessed low risk and the ESS risk certification has been uploaded to the GEF Portal. A more detailed analysis will be conducted during PPG. During implementation, the project will develop Environmental, Social and Governance (ESG) criteria for the financing mechanism. Under Output 3.1, the project will analyse safeguards issues for the financial mechanism and develop an ESG policy and a gender-responsive results framework. It will also develop a gender mainstreaming plan, stakeholder engagement plan, an accountability and grievance mechanism and other safeguard documents for the Facility in line with FAO, GEF and potential donor requirements. The project can also build on SRP Performance Indicator 11 on Child Labor and Youth Engagement and its Child Labor and Youth Inclusion Scorecard, and SRP Performance Indicator 12 on Women empowerment and its Women's Empowerment Scorecard.

Supporting Documents

Upload available ESS supporting documents.

Title	Submitted
Climate risk screening	
ESS checklist	
ESS risk certification	

Part III: Approval/Endorsement By GEF Operational Focal Point(S) And GEF Agency(ies)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter with this template).

Name	Position	Ministry	Date
Mr. Md. Mostafa Kamal	Bangladesh GEF Operational Focal Point / Secretary	Ministry of Environment, Forest and Climate Change	
H.E. Mr. Tin Ponlok	Cambodia GEF Operational Focal Point / Secretary General	Ministry of Environment, National Council for Sustainable Development (NCSD)	
Mr. Thuan Duc Nguyen	Viet Nam GEF Operational Focal Point / Director	Viet Nam Environment Protection Fund, Ministry of Natural Resources and Environment of Viet Nam	

ANNEX A: Project Map and Geographic Coordinates

Please provide geo-referenced information and map where the project intervention takes place

Please refer to Section 1.b.