



## PRE-CONCEPT FOR A REGIONAL PROJECT/PROGRAMME

### PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:	<b>Increasing climate resilience in food systems through the expansion of smart (peri-)urban agriculture</b>
Countries:	Cambodia, Viet Nam
Thematic Focal Area <sup>1</sup> :	Urban development / Food security
Type of Implementing Entity:	MIE
Implementing Entity:	UNIDO
Executing Entities:	
Country A:	Ministry of Agriculture and Rural Development, Viet Nam
Country B:	Ministry of Agriculture, Forestry and Fisheries, Cambodia
Amount of Financing Requested:	14 million USD

### Project Background and Context:

Cambodia and Viet Nam are located in the Greater Mekong Subregion (GMS), which is recognized as one of the most vulnerable region to climate change.<sup>2</sup> Much like other GMS countries, agriculture is the cornerstone of economic growth in Cambodia and Viet Nam. However, the countries are extremely vulnerable to food insecurity due to climate change impacts and the fact that most arable land is already used. The region is expected to face not only much severer droughts by 2030, but also more flooding and greater saltwater intrusion as sea levels rise with temperature<sup>3</sup>. Rising temperatures and changes in the intensity of rainfall, river flow, floods, and droughts will not only destroy farmlands, infrastructure, crops and fisheries in the rural areas, but also damage traditional (peri-)urban farms which grow staple food, vegetables, fruits, etc.

Another notable disrupter is the urbanisation rate. A UN report<sup>4</sup> suggests that by 2040, the urbanisation rate in Viet Nam and Cambodia will respectively reach around 52% and 35%. Increased population and urbanisation will further strain the food systems and question the capacity of the rural-based food systems to support urban populations. In particular, the impacts of climate hazards will disproportionately affect the urban poor if food prices increase due to damaged infrastructure or lowered agricultural productivity. As a result, vulnerable communities are faced with food shortages and diminished livelihoods.

Overall, for both Cambodia and Viet Nam, the agricultural sector is particularly vulnerable to the impacts of climate change, and adaptation strategies are urgently needed. Urban agriculture (UA) is one of the “outside-the-box” solutions gaining increasing attention from governments and policy-makers<sup>5</sup>. UA can be defined as “agricultural production in urban and peri-urban areas for food and other uses, the related transport, processing and marketing of the agricultural

<sup>1</sup> Thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

<sup>2</sup> <https://www.mrcmekong.org/our-work/topics/climate-change/>

<sup>3</sup> Water security threats demand new collaborations: Lessons from the Mekong River Basin, (2017). Economist Intelligence Unit report. <https://www.ccacoalition.org/en/files/2016eiu-water-security-lessons-mekong-river-basinthe-economist-intelligence-unitpdf>

<sup>4</sup> World Population Prospects 2019. UN Department of Economics and Social Affairs. <https://population.un.org/wpp/>

<sup>5</sup> Milan Urban Food Policy Pact <https://www.milanurbanfoodpolicy pact.org>

produce and non-agricultural services provided by the urban farmers”<sup>6</sup>. It is highly diverse, ranging from community gardens, rooftop gardens, vertical farms, aquaponics farms, etc. UA aided with smart technologies can increase food security (especially for the urban poor) and the self-reliance of cities by (1) creating local food production systems that are less vulnerable to climate change impacts; (2) creating modern farms (e.g. vertical farms) in under-utilised urban and peri-urban spaces; (3) enabling all year round food production; and (4) enabling precision farming which enhances productivity and optimises the use of land, water, pesticide, fertilizer. All of these directly contribute to the improvement of food security, income and livelihoods of (peri-)urban farmers, as well as promotion of entrepreneurial activities especially among young people. UA can also contribute to greening the city, improve urban climate, reduce energy footprint, shorten supply chains and stimulate productive use of organic waste.

### Project / Programme Objectives:

The objective of the proposal is to develop innovative adaptation strategies and measures through the expansion of smart (peri-)urban agriculture that will build the adaptive capacity of urban and peri-urban farmers, and strengthen the resilience of local food systems in Vietnam and Cambodia, thereby contributing to food security in these countries.

### Project / Programme Components and Financing:

*\* All project components will be executed in both participating countries.*

Components	Expected Outcomes	Expected Outputs	Amount (US\$)
1. Building up an enabling environment at sectoral and institutional level	<ul style="list-style-type: none"> <li>- UA production practices better integrated and mainstreamed into sectoral plans</li> <li>- Standards for UA farming technologies developed</li> <li>- Institutional capacity of farmer cooperatives strengthened</li> </ul>	<ul style="list-style-type: none"> <li>1.1. Analysis and formulation of sectoral plans conducive to the uptake and expansion of smart UA;</li> <li>1.2. Development of guideline documents to enhance standardization of UA farming technologies;</li> <li>1.3. Strengthening the compliance of products with food and packaging standards to ensure domestic market acceptance;</li> <li>1.4. Strengthening the institutional capacity of UA farmer cooperatives</li> </ul>	1,500,000
2. Capacity development and knowledge management	<ul style="list-style-type: none"> <li>- National training centres supporting smart UA established and made operational</li> <li>- Enhanced technological and entrepreneurship capacities</li> </ul>	<ul style="list-style-type: none"> <li>2.1. Establishment of national UA and climate change-related training centres in cooperation with existing partner institutions in Vietnam and Cambodia;</li> <li>2.2. Training of farmers and producers on UA technologies and entrepreneurship skills through farmer cooperatives and networks;</li> <li>2.3. Facilitation of exchange with technologically advanced countries and mutual learning among participating countries;</li> <li>2.4. Enhance local laboratory capacities to ensure compliance with food safety and quality standards.</li> </ul>	4,600,000

<sup>6</sup>. de Zeeuw, H. (2004). The development of Urban Agriculture; some lessons learnt. Conference paper presented at the Urban Agriculture, Agro-Tourism and City Region Development, Beijing.

3. Technology uptake and enhanced market access of UA products through cooperating with farmer cooperatives and networks	<ul style="list-style-type: none"> <li>- Smart UA technologies adopted and scaled up</li> <li>- Market competitiveness of food produced from sustainable UA farms improved</li> <li>- Partnership with technology providers, MFIs and investors forged</li> </ul>	<ul style="list-style-type: none"> <li>3.1. Survey catalogue of suitable UA technologies, value chain traceability technologies and best practices for the local context;</li> <li>3.2. Pilot suitable UA technologies and practices in selected farmer cooperatives (1-2 pilot farms per country);</li> <li>3.3. Pilot digital value chain traceability technologies and marketing strategies (e.g. e-commerce, certificate/labeling mechanisms) for sustainable UA products; (1-2 pilot value chains per country);</li> <li>3.4. Improving financial services to farmer cooperatives to ensure access to UA technologies;</li> <li>3.5. Roll-out of locally adapted UA technologies and value chain development systems;</li> <li>3.6. Development of partnership with international technology providers and investors to upscale pilot efforts.</li> </ul>	5,577,215
4. Project/Programme Execution cost			1,225,785
5. Total Project/Programme Cost			12,903,000
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			1,097,000
<b>Amount of Financing Requested</b>			14 million

**Project Duration: 4 years (48 months)**

## **PART II: PROJECT /JUSTIFICATION**

### **Project components:**

Traditional UA practices such as community gardens and (peri-)urban field farms are common in Viet Nam and Cambodia, and they have been essential in providing staple food and fresh agri-produce to urban residents living in the vicinity. But to unleash the potential of UA in contributing to climate resilience of food production systems in a meaningful manner, the countries face several common challenges including: *i)* Technological level in traditional UA farms is general low, hence the productivity is low and farmers are vulnerable to extreme climate events; *ii)* awareness of sustainable forms of agriculture is lacking both among producers and consumers; *iii)* lack of overall policies, goals, and incentivising instruments on the government side to promote smart UA; *iv)* lack of multi-level coordination between scientists, urban planners, farm managers, investors, etc.; *v)* lack of coherent knowledge about the availability of best suited technologies, practices and managerial skills; *vi)* and lack of investment and funding patterns conducive to UA. The project will design interventions specifically targeting to remove the identified barriers. To this end, the project is consisted of three main components:

(1) The building up of an enabling policy and institutional environment in each participating country. This component will ensure that smart and sustainable UA practices are integrated into national and/or municipal-level sectoral plans, thereby providing clear political goals, guidance and impetus for the uptake and expansion of smart UA.

(2) Capacity development and knowledge management through establishing national training centres. The component will first do a mapping of existing government and research institutions and establish the centres within the most suitable institutions identified. The centres will demonstrate knowledge, best suitable practices and technologies, provide trainings to farmers, and build up their entrepreneurship skills in collaboration with local farmer cooperatives. Furthermore, the centres seek to develop partnerships with international technology providers and investors and promote mutual learning.

(3) Facilitation of technology transfer, uptake and market access improvement in 1-2 pilot cities in each country in close collaboration with local farmer cooperatives/networks. In both countries, farmer cooperatives and networks are strong institutions and most farmers are part of the cooperatives. Hence, working directly with them is the most efficient strategy to reach out to a large number of (peri-)urban farmers including the most vulnerable ones. Together with farmers cooperatives/networks, international technology providers and microfinance institutions, the component will conduct initial assessment of available UA technologies/systems such as smart agriculture sensors, location systems and smart irrigation systems, and develop pilots for locally adapted technologies/systems in 1-2 selected farms in each country. The component will also apply smart technologies to sustainable value chain development (1-2 pilot value chains in each country), including deploying digital traceability systems and e-commerce strategies to enhance the market access of sustainable UA products. For the roll-out and upscaling of the pilot efforts, the project will explore innovative financial schemes including cooperating with microfinance institutions to improve financial services to farmer cooperatives to ensure access to the UA technologies. Furthermore, to ensure upscaling and sustainability of all activities, the project seeks to reach out to multilateral financial institutions and private investor alliances.

A regional approach to all these components will enable countries to learn from each other, find common solutions for climate change adaptation in the region and leverage existing regional institutional resources. A regional approach is also cost-effective for the following reasons:

1. Both Vietnam and Cambodia face similar climate change challenges on food systems, it is therefore cost-effective to collect, generate, document and share best UA technologies and practices suitable to the context of these countries.
2. A regional approach can leverage local wisdom generated from different countries and allows knowledge and experience exchange and mutual learning. This in turn can help the project design better policy interventions, technical support, financing mechanisms, marketing strategies, etc. In a single-country project, knowledge and experience tend to be kept in silo.
3. A regional approach is more likely to catalyse public and private investment in smart UA practices, thereby maximising technology scalability and heightening the contribution of UA to climate resilience and adaptation across the whole region.

The project proposal has great consistency with national policies, plans and strategies for climate change. Addressing food supply is a high priority in the Nationally Determined Contributions (NDCs) of both countries. In particular, the proposed project activities are in line with their National Adaptation Plans: Viet Nam's *NAP for 2021 – 2030 period with a vision by 2050* specifies tasks in the agriculture sector which include “enhance effectiveness of use of agricultural land”, “improve resilience of agricultural sector through revising and completing laws and policies”, “provide training and improving capacity”, “apply high technology, mechanization, automation, and advanced farming and sustainable intensive farming practices which are adaptable to climate change”. In Cambodia's NAP, five climate strategic objectives are identified in the agricultural sector, including the one to “enhance capacity of farmers with new technologies in coping with climate change”. The proposed project also contributes to regional development agendas, for example, the GMS Economic Cooperation Program Strategic Framework 2012–2022 with its sector priority on “Agriculture – Pillar 2: Promoting climate-friendly agriculture and natural resource management”.

### **Promotion of new and innovative solutions**

The project proposes several innovative strategies to offset the limitations of the existing food production system. Firstly, it demonstrates innovation by deploying Industry 4.0 technologies (e.g. sensors, big data, robotics, aerial imagery, etc.) to different models of urban farming systems (e.g. traditional field farms as well as modern farms such as vertical farms, green houses and rooftop

gardens), thereby helping farmers achieve precision farming, improve productivity and resource efficiency. Secondly, the approach can create more space for food production by tapping under-utilised urban and peri-urban spaces.

### **Sustainability of the project**

The project will set up an eco-system that connects major stakeholders, thereby creating a sustainable environment for the further uptake and expansion of UA practices in the countries. The integration of UA into sectoral plans, institutional goals and training curriculum will ensure that UA has a long-term development prospect. In addition, the training programmes will have a long-lasting impact on farmers' livelihoods and the sharing of experiences and passing-on of knowledge through them will improve opportunities for replication and benefit a wider local population. Also, the training centres established in partnership with existing local institutions will continue to provide services even after the exit of the project. Moreover, the project aims to explore linkages to microfinance institutions, investment portfolios of multilateral development banks and private investors in order to leverage finance into the UA sector. It is also envisaged that projects replicating and upscaling this initiative will be designed for other countries in the region as well as beyond, targeting e.g. GCF and GEF-8 (food systems integrated program).

### **Economic, social and environmental benefits**

Vulnerable communities and groups including smallholder farmers and female farmers often bear the brunt of climate change and food insecurity due to poor access to information, technology, credit and other extension services. To ensure inclusiveness and mitigate negative social impacts, the project will try to engage a wide range of communities and groups via the network of farmer cooperatives, providing tailored trainings and offering technical and entrepreneurship development support to different types of farmers, including women and youth. Partnership with microfinance institutions, development banks and investors has the potential to improve financial services to UA farmers, in particular the vulnerable groups (i.e. women, smallholder farmers and unemployed youth). The project will also adopt a gender mainstreaming strategy to promote gender equality at all stages. It will support the capacity-building of both men and women in governmental institutions, enterprises and farmers' cooperatives. The consultative process is planned to be undertaken during project preparation, with particular reference to vulnerable groups, including gender considerations, in compliance with the Environmental and Social Policy of the Adaptation Fund.

## **PART III: IMPLEMENTATION ARRANGEMENTS**

UNIDO will be the implementing entity for this project, and it will also take upon partial execution function for regional coordination. A regional steering committee will be set up, overseeing and guiding the implementation and mainstreaming results into decision-making. The regional steering committee will be composed of representatives from UNIDO, the executing entities, the National Designated Authorities of AF of each country, and other international partners. In addition, a national steering committee will be set up in each country, consisting of officials of relevant government institutions, NGOs members and other local counterparts; and a local Project Management Unit (PMU) will be set up within each country's executing agency. UNIDO will act as the overall coordinator of the project, responsible for the delivery of the overall project objective. The work will be supported through project partners based on their respective comparative advantages, and their experiences/existing networks in the region. A more detailed implementation arrangement will be presented at the concept formulation stage.

**PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY**

**A. Record of endorsement on behalf of the government<sup>7</sup>** *Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project/programme. Add more lines as necessary. The endorsement letters should be attached as annexes to the project/programme proposal.*

<i>Tin Ponlok, Secretary of State, Ministry of Environment, Kingdom of Cambodia</i>	<i>Date: August 3, 2021</i>
<i>Tran Hong Ha, Minister of Natural Resources and Environment, Socialist Republic of Viet Nam</i>	<i>Date: August 2, 2021</i>

**B. IMPLEMENTING ENTITY CERTIFICATION** *PROVIDE THE NAME AND SIGNATURE OF THE IMPLEMENTING ENTITY COORDINATOR AND THE DATE OF SIGNATURE. PROVIDE ALSO THE PROJECT/PROGRAMME CONTACT PERSON'S NAME, TELEPHONE NUMBER AND EMAIL ADDRESS*

<p>I certify that this proposal has been prepared in accordance with guidelines provided by the Adaptation Fund Board, and prevailing National Development and Adaptation Plans (Viet Nam's NAP for 2021-2030, Cambodia's NAP, as well as GMS Economic Cooperation Program Strategic Framework 2012–2022) and subject to the approval by the Adaptation Fund Board, <u>commit to implementing the project/programme in compliance with the Environmental and Social Policy of the Adaptation Fund</u> and on the understanding that the Implementing Entity will be fully (legally and financially) responsible for the implementation of this project/programme.</p>	
<p><i>Mr. Akos KOESZEGVARY</i>  <i>(Signed on his behalf by officer-in-charge Ms. Ganna ONYSKO)</i></p> <p><i>Ganna Onysko</i></p> <p>Implementing Entity Coordinator</p>	
<p>Date: <i>August 6, 2021</i></p>	<p>Tel. and email: +43 1 26026 4573  <a href="mailto:A.koeszegvary@unido.org">A.koeszegvary@unido.org</a></p>
<p>Project Contact Person: Mr. Zhengyou PENG</p>	
<p>Tel. And Email: +43 1 26026 3831; <a href="mailto:z.peng@unido.org">z.peng@unido.org</a></p>	

<sup>7</sup>Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.

**KINGDOM OF CAMBODIA**  
**Nation Religion King**



**National Council for Sustainable Development**

No: 027 NCS

**Letter of Endorsement by Government**

Phnom Penh, 03 August 2021

To: The Adaptation Fund Board  
c/o Adaptation Fund Board Secretariat  
Email: Secretariat@Adaptation-Fund.org  
Fax: 202 522 3240/5

Subject: Endorsement for a regional project/programme entitled "Increasing climate resilience in food systems through the expansion of smart (peri-)urban agriculture"

In my capacity as designated authority for the Adaptation Fund in Cambodia, I confirm that the above regional project/programme proposal is in accordance with the Royal Government of Cambodia priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in the agriculture sector in the country.

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme will be implemented by the United Nations Industrial Development Organization (UNIDO) and executed by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and concerned line ministries/agencies in Cambodia. *st*

Sincerely,

Tin Ponlok  
Secretary of State  
NCS/Ministry of Environment

Cc: Mr. Sok Narin, UNIDO Country Representative



SOCIALIST REPUBLIC OF VIET NAM  
**MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT**

---

Ha Noi, August , 2021  
Ref. No: /MoNRE-DCC-2021

The Adaptation Fund Board  
C/o Adaptation Fund Board Secretariat  
E-mail: Secretariat@Adaptation-Fund.org  
Fax: 202 522 3240/5

***Endorsement for the Project Proposal on "Increasing Climate Adaptation in Food Systems through the Expansion of Smart Urban Agriculture".***

In my capacity as designated authority for the Adaptation Fund in the Socialist Republic of Viet Nam, I confirm that the above regional project proposal is in accordance with the national priorities in implementing adaptation activities to reduce adverse impacts of, and risks posed by climate change in the Socialist Republic of Viet Nam, which is a part of the Greater Mekong Sub-region.

Accordingly, I am pleased to endorse the above project proposal with support from the Adaptation Fund. If approved, the project will be executed by the Ministry of Agriculture and Rural Development of Viet Nam (MARD) and implemented by the United Nations Industrial Development Organization (UNIDO).

Sincerely,

**Tran Hong Ha**  
**Minister of Natural Resources and Environment**  
**Socialist Republic of Viet Nam**



## Project Formulation Grant (PFG)

Submission Date: 9 August 2021

Adaptation Fund Project ID: Unknown

Countries: Cambodia, Viet Nam

Title of Project/: Increasing climate resilience in food systems through the expansion of smart (peri-)urban agriculture

Type of IE (NIE/MIE): MIE

Implementing Entity: United Nations Industrial Development Organization

Executing Entities: Country A: Ministry of Agriculture and Rural Development, Viet Nam

Country B: Ministry of Agriculture, Forestry and Fisheries, Cambodia

### A. Project Preparation Timeframe

Start date of PFG	<b>November 1, 2021</b>
Completion date of PFG	<b>March 30, 2022</b>


### B. Proposed Project Preparation Activities (\$)

Describe the PFG activities and justifications:

List of Proposed Project Preparation Activities	Output of the PFG Activities	USD Amount
Undertake environmental and social technical assessments	ESS report	10,000
Coordinate with local counterparts to develop project interventions and implementation arrangement in more detail	Formulation of project concept	10,000
Total Project Formulation Grant		20,000

### C. Implementing Entity

This request has been prepared in accordance with the Adaptation Fund Board's procedures and meets the Adaptation Fund's criteria for project identification and formulation

Implementing Entity Coordinator, IE Name	Signature	Date (Month, day, year)	Project Contact Person	Telephone	Email Address
Mr. Akos KOESZEGVARY (Signed on his behalf by officer-in-charge Ms. Ganna ONYSKO)		August 6, 2021	Mr. Zhengyou PENG	+43 1 26026 3831	<a href="mailto:z.peng@unido.org">z.peng@unido.org</a>