



ADAPTATION FUND

PRE-CONCEPT FOR A REGIONAL PROJECT/PROGRAMME

PART I: PROJECT/PROGRAMME INFORMATION

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

Countries: Cambodia, Viet Nam

Thematic Focal Area: Urban development / Food securityAgriculture

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

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Project Background and Context:

Cambodia and Viet Nam are located in the Greater Mekong Subregion (GMS), which is recognized/identified as one of the most vulnerable regions to climate change.ⁱⁱⁱ Threats include changing river flow dynamics due to glacial melting upstream and changes in monsoon dominated precipitation patterns, aggravated by hydropower constructions along the entire river^v. Particularly in the lowlands and towards the Mekong delta (which sinks at about 1 cm annually), land subsidence, amplifies the effect of sea-level rise^v. Flooding frequencies, saltwater intrusion and tidal amplitude are expected to rise sharply by 2030, however also more serious droughts will affect agricultural production^{vi}.

A Much like other GMS countries, agriculture is the a cornerstone of economic growth in Cambodia and Viet Nam and overall output has expanded considerably over the most recent decades. However, the countries are extremely vulnerable to progress in addressing food insecurity are at risk^{vii} 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^{viii}. 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. In addition, the continuous development in hydropower infrastructure in both countries is making the river system more vulnerable to climate change impacts^{ix}.

Another notable disrupter driving force in this regard, areis the progressing urbanization trends themselvesrate. A UN-rReports^x suggests that by 2040, the urbanization rates in Cambodia and Viet Nam and Cambodia will respectively reach around 35 and 52% % and 35%respectively (up from now 24 and 37%). Urban expansion encroaches particularly on most productive arable lands^{xi}. While food security involves economic and geographic distributional factors beyond simple food availability^{xii}, overall Increased population growth and urbanization will further strain the food systems^{xiii} and challengequestion the capacity of the rural-based food systems to support urbanites populations. In particular, tThe overall impacts of climate hazards will disproportionately affect the urban poor^{xiv} if food prices increase due to damaged infrastructure, or lowered agricultural productivity or similar supply shocks. Already during the current covid-19

related lockdowns, food availability and diversity in urban areas was significantly reduced and ~~a~~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^{xv} gaining increasing attention from governments and policy-makers^{xvi}. 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 produce and non-agricultural services provided by the urban farmers”^{xvii}. The practice ~~it~~ is highly diverse, ranging from community gardens, rooftop gardens, vertical farms, aquaponics farms, etc.

UA aided with smart technologies can increase food security and livelihood strategies (especially for the urban poor) and the self-resilience ~~liance~~ of cities^{xviii} by (1) creating diversified local food production systems that are less vulnerable to climate change impacts; (2) creating modern farms (e.g. vertical farms) in ~~under-utilised~~ under-utilized or recovered urban and peri-urban spaces; (3) enabling all season ~~year round~~ stable food production; and (4) enabling precision farming which enhances productivity, food safety and ~~optimises~~ optimizes the use of land, water^{xix}, pesticide, fertilizer. The ongoing transformation of distribution systems (street vendors and wet markets, supermarkets and convenient stores, online marketing and distribution) provides opportunities for innovation to improve climate resilience. 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 and food waste, shorten supply chains and stimulate productive use of organic residue and urban circularity ~~waste~~. Traditional UA practices such as community gardens and (peri-)urban field farms are common in Viet Nam and Cambodia, ~~often on a small-scale and informal basis, and they have been essential in providing staple food and fresh agri-produce to urban residents living in the vicinity. The informal UA practices however could result in negative impacts on the urban environment, and lead to excessive water withdrawal for irrigation, driving land subsidence, soil erosion and pollution of groundwater if, for example chemical fertilizers and pesticides are over-used. While the specific UA baseline in pilot cities will be carved out, several general challenges have been identified in the sub-sector. But to unleash the potential of UA in contributing to climate resilience of food production systems in a meaningful manner, the countries face several 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 incentivizing instruments on the government side to promote smart UA; iv) lack of multi-level ~~stakeholder~~ 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.

UA aided with smart technologies can increase food security and livelihood strategies (especially for the urban poor) and the resilience of cities^{xx} ~~byas it can~~ (1) ~~create~~ ~~ing~~ diversified local food production systems that ~~have a more controllable environment and are hence less vulnerable to climate change impacts;~~ (2) ~~create~~ ~~ing~~ modern farms (e.g. vertical farms) in under-utilized or recovered urban and peri-urban spaces ~~which does not induce land grabbing;~~ (3) ~~enable all season, local production for urban consumption, thereby shortening supply chains and reducing food footprint~~ enabling all season stable food production; and (4) ~~enable~~ ~~ing~~ precision farming which enhances productivity, food safety and optimizes the ~~rational~~ use of land, water^{xxi}, pesticide, fertilizer; (4) drive new employment and entrepreneurship opportunities and bring in new skills for urban population, especially for the urban poor and young people.

thereby promoting urban inclusion; and (5) contribute to greening the city, improve urban climate, and stimulate productive use of organic residue and urban circularity. Also, the ongoing transformation of food distribution systems (street-vendors and wet markets, supermarkets and convenient stores, online marketing and direct- distribution) provides opportunities for innovation to improve climate resilience. All of these directly have potential for contributions 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 and food waste, shorten supply chains and stimulate productive use of organic residue and urban circularity.

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 urban food systems in southern Vietnam and Cambodia, thereby contributing to food security in these countries.

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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"> - UA production practices better integrated and mainstreamed into sectoral plans - Standards for UA farming technologies developed - Institutional capacity of farmer cooperatives strengthened 	1.1. Baseline analysis and formulation of sectoral plans conducive to the uptake and expansion of smart UA; 1.2. Design policy measures to formalize UA practices and in particular address the issue of land tenure; 1.23. Development of guideline documents to enhance standardization of UA farming technologies; 1.34. Strengthening the compliance of products with food and packaging standards to ensure food safety and domestic market acceptance; 1.45. Strengthening the institutional capacity of UA farmer cooperatives and institutions;	1,500,000
2. Capacity development and knowledge management	<ul style="list-style-type: none"> - National training centres established and made operational - Enhanced technological and entrepreneurship capacities 	2.1. Establishment of national UA and climate change-related training centres in cooperation with existing partner institutions including private sector entities in Vietnam and Cambodia; 2.2. Training of farmers, producers and distributors on UA technologies, practices and entrepreneurship skills through farmer cooperatives and network private companies; 2.3. Facilitation of exchange with technologically advanced countries and mutual learning among participating countries; 2.4. Enhance local laboratory capacities to ensure compliance with food safety and quality standards.	4,600,000

3. Technology uptake and enhanced market access of UA products through collaborating with farmer cooperatives and networks	<ul style="list-style-type: none"> - Smart UA technologies adopted and scaled up - Market competitiveness of food produced from sustainable UA farms improved - Partnership with technology providers, MFIs and investors forged 	3.1. Survey catalogue of suitable UA technologies, value chain traceability technologies and best practices for the local context; 3.2. Pilot suitable UA technologies and practices in selected farmer cooperatives (4-2-several pilot farms and startups for direct marketing per country); 3.3. Pilot digital value chain traceability technology and marketing strategies (e.g., e-commerce, certificate/labelling mechanisms) for sustainable UA products; (4-2several pilot value chains per country); 3.4. Improving financial services to farmer cooperatives to ensure access to UA technologies; 3.5. Roll-out of locally adapted UA technologies and value chain development systems; 3.6. Development of partnership with international technology providers and investors to upscale pilot efforts.	5,577,215
4. Project/Programme Execution cost			1,225,7
5. Total Project/Programme Cost			12,903,000
6. Project/Programme Cycle Management Fee charged by the Implementing Entity (if applicable)			1,097,000
Amount of Financing Requested			14 million

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Project Duration: 4 years (48 months)

PART II: PROJECT /JUSTIFICATION

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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 ~~is consisted of three main components~~ will design interventions specifically targeting to remove the identified barriers. ~~To this end, the project is consisted of three main components:~~

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(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~~ ~~centers~~. The component will first do a mapping of existing government, ~~and~~ research ~~and~~ private sector institutions ~~entities~~ and establish the ~~centres~~ ~~centers~~ within the most suitable institutions identified. The ~~centres~~ ~~centers~~ will demonstrate knowledge, best suitable practices and

technologies, provide trainings to farmers, and build up their entrepreneurship skills in collaboration with local farmer cooperatives and suitable private companies. Furthermore, the centres seek to develop partnerships with international technology providers and pro poor investors and promote mutual learning. Since farming, processing and retail is increasingly a digital, smart and knowledge driven business, appropriate production and marketing concepts including e-commerce will be required.

(3) Facilitation of technology transfer, uptake and market access improvement in 1-2 pilot cities located in the lower Mekong river and Mekong delta in each country (e.g. Phnom Penh, Ho Chi Minh city and Can Tho) in close collaboration with local farmer cooperatives and the private sector/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 at 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, urban planners, 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 several selected farms in each country pilot city. For municipal governments, even temporary use of reclaimed land areas for agribusiness can be a no-regret strategy and contingency measure of urban development. The component will also apply smart technologies to sustainable value chain development (1-2 several 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.

The project has selected Viet Nam and Cambodia as target countries as it focuses interventions in populous cities in the lower Mekong river and Mekong delta which are particularly vulnerable to climate change impacts and naturally connected by the shared geography. Also, UNIDO has an active presence in these two countries and in particular on associated topics. A regional approach to all these components the project will enable the two 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 countries face similar climate change challenges on food systems which depend (and affect) the Mekong delta aquifer. It is therefore most promising and cost-effective to collect, generate, document and share best UA technologies and practices suitable to the local contexts 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 catalyze public and private investment in smart UA practices, thereby maximising maximizing technology scalability and heightening the contribution of UA to climate resilience and adaptation across the whole region. Exchange of trained and skilled experts can contribute to development of clusters with positive externalities.

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, identifies 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 proposal can also contribute to Cambodia's Agricultural Sector Strategic Development Plan (2019–2023) with the aim of enhancing agricultural productivity, diversification, and commercialization, as well as the Master Plan for Crop Production in Cambodia for 2030 which puts a focus on value chain prioritisation, technology access and transfer, sustainable farming practices, food safety and etc. It is also in line with specific municipal and sectoral plans such as Ho Chi Minh city's municipal agricultural digital transformation strategy, Can Tho's strategic plan to become a smart city by 2025 via integrating smart approaches in urban management including in food safety and land use management.

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 Innovation and sustainability of the project

The project proposes to produce food in urban areas to meet growing local demand as an innovative solution to offset the several innovative strategies to offset the limitations of the existing food production system which relies heavily on rural agriculture which is particularly vulnerable to climate change impacts. Firstly, it also demonstrates innovation by deploying Industry 4.0 technologies (e.g., ubiquitous sensors, big data, robotics, geoinformational imagery, supply chain traceability etc.) to different models of urban farming systems (e.g., traditional field farms as well as modern high-tech farms such as vertical farms, green houses and rooftop gardens), thereby helping farmers achieve precision farming, improve productivity, product quality and resource efficiency. Secondly, the approach can also create more space for food production by tapping under-utilised urban and peri-urban spaces for pro-poor, regenerative farming practices.

Also, the project will take a multi-stakeholder approach by

Sustainability of the project

The project will setting up an eco-system platform that connects major stakeholders including the private sector and consumers (including e.g., hotels and tourism resorts with steady demand for high quality produce), 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 and capacity building programmes developed and conducted in partnership with existing local institutions and in particular with the private sector will collaborate and continue to provide services even after the exit of the project, generating long-term impacts on the further development of the sub-sector as well as on local livelihoods. Moreover, the project aims to explore linkages to microfinance

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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 to mitigate negative social impacts, the project will try to engage a wide range of communities and groups via the network of farmer cooperatives and schools, 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. An executing role will enable UNIDO to better perform the regional coordination function and procure relevant services (e.g. training and knowledge management) from qualified international/regional entities. In addition, whereas the executing agencies in the countries are national ministries which might limit their interaction with the private sector, UNIDO is well positioned to bring together all stakeholders and in particular build partnership with the private sector which is vital for the success of this project.

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^{xxii}; 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^{xxiii}** *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*

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 (.....list here.....) 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.	
Name & Signature Implementing Entity Coordinator	
Date: (Month, Day, Year)	Tel. and email:
Project Contact Person:	
Tel. And Email:	

ⁱ Thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

ⁱⁱ <https://www.ipcc.ch/assessment-report/ar6/>

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

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<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>Mr. Akos KOESZEGVARY (Signed on his behalf by officer-in-charge Ms. Ganna ONYSKO)</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.koeszegvary@unido.org</p>
<p>Project Contact Person: Mr. Zhengyou PENG</p>	
<p>Tel. And Email: +43 1 26026 3831; z.peng@unido.org</p>	

⁷Each 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.

https://greatermekong.panda.org/challenges_in_the_greater_mekong/infrastructure_development_in_the_greater_mekong/

^v <https://www.nature.com/articles/nclimate2469>

^{vi} 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>

^{vii} For example, Cambodia unfortunately still records some of the highest levels of stunting, underweight and anaemia of the region, which indicate shortages in dietary energy supply, and quality <http://www.fao.org/3/at706e/at706e.pdf>

^{viii} 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>

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https://greatermekong.panda.org/challenges_in_the_greater_mekong/infrastructure_development_in_the_greater_mekong/

^x World Population Prospects 2019. UN Department of Economics and Social Affairs.

<https://population.un.org/wpp/>

^{xi} <https://www.nature.com/articles/s41467-019-13462-1.pdf>

^{xii} <https://royalsocietypublishing.org/doi/pdf/10.1098/rstb.2010.0136>

^{xiii} doi.org/10.48565/3xdb-qg20

^{xiv} <https://journals.sagepub.com/doi/pdf/10.1177/0956247810380375>

^{xv} <https://bonndoc.ulb.uni-bonn.de/xmlui/handle/20.500.11811/9130>

^{xvi} Milan Urban Food Policy Pact <https://www.milanurbanfoodpolicypact.org>

^{xvii} 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.

^{xviii} https://sc-fss2021.org/wp-content/uploads/2021/04/Action_Track_3_paper_Boost_Nature_Positive_Production.pdf

^{xix} Groundwater extraction for agricultural use, is a main driving force for the sinking of the Mekong Delta, which was estimated about 18cm between 1991 and 2016. Urban agriculture in aquaponics and similar closed loop systems have the potential to be much more water efficient production systems and to address this.

Minderhoud, P.S.J., H. Middelkoop, G. Erkens, and E. Stouthamer, 2020: Groundwater extraction may drown mega delta: projections of extraction-induced subsidence and elevation of the Mekong delta for the 21st century. *Environmental Research Communications*, 2(1), 011005, doi:10.1088/2515-7620/ab5e21.

Erban, L.E., S.M. Gorelick, and H.A. Zebker, 2014: Groundwater extraction, land subsidence, and sea-level rise in the Mekong Delta, Vietnam. *Environmental Research Letters*, 9(8), 84010, doi:10.1088/1748-9326/9/8/084010.

^{xx} https://sc-fss2021.org/wp-content/uploads/2021/04/Action_Track_3_paper_Boost_Nature_Positive_Production.pdf

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^{xxii} A tentative list of potential international/regional partners include: the Mekong River Commission, the Asia Institute of Technology, the Asia Development Bank, Centre for Sustainable Agricultural Mechanization of ESCAP, Wageningen University & Research (Netherlands), etc. In addition to national

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executing entities and municipal government agencies, local partners include the Farmer and Nature Net (Cambodia), Federation of Cambodian Farmer Organisation for Development, Association Sustainable Agriculture Communities (Cambodia), Royal University of Agriculture (Cambodia), Viet Nam Farmers' Union, Thang University - Smart Agriculture Research and Application Team (Viet Nam), the Ho Chi Minh City Agriculture Extension Center, Fablabs in Phnom Penh and Hanoi. Suitable micro-finance institutions, investors and technology providers will be identified at the project formulation stage.

^{xxiii} 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. *[Signature]*

Sincerely,

A red circular official stamp of the Ministry of Environment, Urban Planning and Construction of Cambodia. The stamp features a central emblem with a temple and is surrounded by text in Khmer. A blue ink signature is written over the stamp.

[Signature]
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	November 1, 2021
Completion date of PFG	March 30, 2022


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	z.peng@unido.org