

# Transforming Greater Mekong Food Systems Hub

## Impact Summary

This Hub will deliver, and build regional capacity in, food systems research enabling regional policy makers and practitioners to devise and implement interventions to tackle the triple burden of malnutrition and environmental degradation and benefit poor populations across the GMS. Building food system understanding and analytical capacity will increase planning capability. This will complement productionist approaches to food security challenges, by recognising the full set of food system actors, their activities, motives and constraints, and the outcomes of their collective activities for food security, and other socio-economic and environmental goals. Specifically, we will deliver:

1. Enhanced food system resilience to environmental change in a rapidly changing food system
2. More sustainable economic growth within the food sector via improved access to markets and reduced supply chain risk
3. Improved health and wellbeing by reducing food and nutrition poverty, inequality and insecurity
4. Rural and urban poor are empowered to participate in improved food system governance that protects the interests of vulnerable groups

This Hub will benefit a range of publics and stakeholders across the food system categorised below, but our approach to impact also focuses on dynamic interactions between actors in social networks in a changing food system:

A. Consumers with poor diets, recognising demographic, socio-economic and cultural differences between different social and ethnic groups in rural and urban regions

B. Food manufacturers and retailers, and their supply chains: food manufacturers and retailers with complex supply chains in the GMS (e.g. CP Foods Ltd); local SMEs and social enterprises who are innovating in the GMS food sector (e.g. Doi Tung); fresh (wet) food market retailers; insurance companies (e.g. Bao Viet), micro-insurance and micro-credit schemes involved in food production and supply (e.g. Mekong Plus microcredit scheme)

C. Farmers and fishers: farmer and fishing groups representing both smallholders and larger commercial operations; labour organisations; farmer cooperatives (e.g. Coffee producer cooperative (CPC) in the Bolaven plateau); trade associations

D. Policy community: local government (e.g. Cambodian Provincial Departments of Environment and Agriculture); national governments, agencies and regulators with responsibility for agriculture, food, environment and economic development (e.g. Vietnam Ministry of Finance and Ministry of Agriculture and Rural Development, National Food Institute-Thailand), and other publically-funded extension services in each country; regional policy community including inter-governmental associations (e.g. Asian Development Bank, Mekong River Commission); international policy community (e.g. UN FAO, World Food Programme, secretariats for each of the Rio Conventions and their science-policy interfaces, including working relationships with the UNCCD Secretariat and ongoing input to special reports, outlooks and other initiatives run by IPCC, IPBES and UNCCD's SPI; WHO; World Obesity Federation; Consumers International; OECD)

E. National research and development capacity: Higher Education, research institutes (e.g. Cambodian Centre for Study and Development in Agriculture), agricultural colleges/other training providers, professional bodies and learned societies across the GMS will benefit from opportunities for co-productive research, increased capacity, knowledge exchange and impact.

F. Civil society: CSOs and NGOs and their local to national and international networks (e.g. SUMERNET-GMS network of 76 CSOs and NGOs, Voluntary Services Overseas), representing the interests of consumers, rural and urban communities, smallholders, minority groups and other relevant publics (e.g. Asia-Pacific Forum for Women Law & Development) affected by malnutrition, food insecurity, obesity and related diseases, conservation and environment.

## **Pathway to Impact**

### **Our Approach**

Our approach to transforming food systems is grounded in addressing weaknesses in governance, and using engaged research to build capacity, networks and partnerships between diverse stakeholders. Our strategy focuses on:

- Building networks and alliances across society, supporting processes of co-learning, analysis, dissemination and dialogue, and strengthening existing institutional mechanisms to be responsive to needs of poor producers and consumers
- Supporting key change agents at specific points of influence in food systems – whether they be within government agencies, private sector or within wider civil society
- Generating evidence and policy arguments based on highest quality research processes, and opening spaces for informed, deliberative public policy dialogues.

The universities in this partnership all have a commitment to, and an institutional remit for, supporting community service and local development. Each university has its own networks that bring together producers, private sector actors, government agencies and development partners, as well as proven track records of operating successfully in these contexts.

### **Impact planning and delivery**

Impact planning and delivery are co-ordinated by WP4 with oversight from the Executive Group and Hub Advisory Board (see Governance section of Case for Support). We will use a framework for monitoring evaluation, accountability and learning (MEAL) that enables monitoring and evaluation of impacts that can be directly attributed to research conducted in the Hub. Our Pathway to Impact and preliminary Theory of Change is designed to meet a series of linked impacts, co-identified with stakeholders at different temporal (from short to long-term) and spatial (from local and regional to national and international) scales. This was informed by a more detailed logic model (not presented here) co-designed with in-country partners to deliver a wider range of fine-grained and SMART impact goals linked to research across all WPs and tailored to the socio-cultural, political, economic, environmental and institutional contexts of each partner country.

These more detailed plans will be articulated in a full post-award Impact Plan, which will include a more detailed stakeholder analysis based on empirical data collection using cutting edge interest-influence-benefit matrices, a further developed Theory of Change, a Logframe and full monitoring and evaluation plan (see WP4). The Impact Plan will include a detailed assessment of assumptions and risks associated with each of the illustrative pathways to impact outlined below. Based on this assessment, pathways to impact will be adapted and contingency plans will be made to ensure that the project takes an adaptive approach to the generation of impact from the research. As part of this adaptive approach, the Impact Plan will be updated and reviewed by the Executive Group and Hub Advisory Board annually.

Evidence of the needs that are met by achieving these goals is presented in the ODA compliance statement, and further unpacked in the introduction to our Case for Support. We follow a Responsible Research and Innovation approach that will emphasize openness, transparency, diversity and inclusiveness, and will adapt research as far as possible to changing contexts and stakeholder needs. Resources required to support this pathway to impact are outlined in the JoR.

### **Activities**

The Hub will be implemented through a set of case studies (see Case for Support) selected to cover the biophysical and socio-economic diversity of the region. In each a set of locally relevant commodities will be chosen for nutrients (e.g. fruit), cash crops (e.g. coffee, tea), calorie (e.g. rice, wheat), and protein (e.g. fish, meat). Each case study will undertake social, economic and environmental research on primary production, supply chain and markets, diets and dietary change in relation to rural and urban livelihoods, water resources, and local, national and regional policies and governance. A full range of activities will be developed as part of the post-award Impact Plan (WP4). Here, we present 3 cross-cutting impact clusters drawn from our Theory of Change with indicative impacts, assumptions and indicators, showing the value of our food systems approach for addressing the intractable development challenges outlined in our Case for Support:

#### ***Cluster 1: Food system security***

**The intractable challenge:** Climate, land use, demographic and environmental change across the GMS, combined with dam building and sand mining, is making more people vulnerable to flooding and drought, reducing their access to safe, sufficient and appropriate food and water and impacting local and global supply chains and food prices.

**The research:** Our food systems approach will show how changes in ecosystem services interact with water management and food production to impact livelihoods, supply chain management and nutrition, leading to co-production of food system innovations embedded in governance regimes, supply chains and market structures that contribute to resilient livelihoods & food/nutrition security.

**The impacts:** Taking a food systems approach, the Hub will enable co-design of evidence-based interventions in policy and practice that reduce vulnerability to both environmental and social drivers of change e.g. making smallholder household incomes and food supply in GMS countries more resilient to climate change, whilst reducing reliance on chemical use. Smallholders and other marginalised groups will co-produce tools to manage supply chain risks and play a larger role in supply chain decision making processes, leading to improved standards & better market access.

**Risks and assumptions:** This work assumes access to key data sources to develop and validate model predictions and/or that necessary new data can be collected. However, we build on a substantial body of prior work by Co-Is in the region, giving us access to existing data and enabling efficient new data collection. We are working with major retailers and their suppliers who are active across the region to maximise impacts across the supply chain. There is a risk that short term business imperatives and market volatility may disrupt planned pathways to impact.

**Indicators and milestones:** Integration of model-based prediction and monitoring in at least one national trade and/or policy programme per GMS country (year 3-4); contribution of modelled evidence-base to development of new agricultural policy mechanisms in at least three GMS countries (year 4-5); introduction of new supply chain standards or similar in at least three GMS countries (year 3-5); demonstration plots for sustainable production in at least three GMS countries (year 1-3); uptake of improved practices by smallholder farmers (year 2-5); smallholder groups setting up new hybrid organizations (2 per case study by year 3, 4 by year 5).

### ***Cluster 2: Food systems analysis capacity***

**The intractable challenge:** Current policy and practice decision making across GMS food systems is dominated by profit, leading to (for example) trade-offs between policies operating in different sectors/scales, leading to high levels of dangerous (often banned) substances in the food chain, and unsustainable levels of consumption leading to food inequality and ill-health.

**The research:** Using food systems analysis, we seek to understand what is driving transitions towards more or less sustainable, resilient and nutritious food systems, informing debate about directions of change and potential trade-offs implicit in chosen transition pathways.

**The impacts:** A Greater Mekong Food Systems Network will bring existing and new networks together, leading to new training and policy and practice options. "Learning schools" in case study areas will share best practices. Networks of diverse actors (e.g. extension agents, NGOs and government agencies) will be able to apply food systems analysis in policy, planning and practice.

**Risks and assumptions:** Full delivery of these impacts relies on access to data for the initial food systems analysis upon which the network and capacity building work is based. Engagement in the network is core to its success, so we have co-designed the network with in-country partners to build on existing networks operating across the system where there are currently no networks.

**Indicators and milestones:** More inclusive value chains and community engagement will be evidenced via institutional and private sector innovations (years 3-5); capacity for macro analysis of food systems in the GMS demonstrated through changes in decision-making roles in policy, practice Pathways to Impact Pathways to Impact

and research within local institutions moving from sectoral to systems-level planning and increasing alignment between different policy targets and activities (years 4-5).

### ***Cluster 3: Tackling the triple burden of malnutrition***

**The intractable challenge:** Hunger, micronutrient deficiency and obesity are escalating in the region, driven by rising costs and increasing inequalities in access to nutritious food, coupled with promotion of unhealthy energy-dense food particularly to women/children in low income families.

**The research:** We take a food systems approach to assess factors influencing dietary transitions linked to challenges in production systems, supply chains and food promotion, leading to interventions to reduce vulnerability of low income families to unhealthy dietary transitions and habits.

**The impacts:** Our food systems approach will lead to the development of more integrated food security policy options at local, national and regional levels that reduce the risk of micronutrient

malnutrition and tackle malnutrition, obesity and related conditions. Local partners will be trained in use of dietary assessment tools to regularly monitor dietary intake beyond the life of the project.

**Risks and assumptions:** This work assumes involvement of members of the national and international policy community, many of whom are represented via our Hub Advisory Board and long-standing relationships with in-country project partners. We are aware that ethnic differences in preference will limit transferability of some interventions, requiring cultural advice/co-development.

**Indicators and milestones:** Increase food efficiency rates based on analysis of whether there is enough food/nutritious food at affordable cost and time (beyond year 5); improved weight and micronutrient status of vulnerable groups through improved access to nutritious food (year 5); evidence of improved food labelling systems in key sectors (year 5).

## Legacy

**The GMS Food Systems Network:** The Hub will build on and extend a number of key regional networks to develop a new GMS Food Systems Network, co-ordinated by SEI Asia and supported by the ADB Agricultural Working Group. This will be developed in collaboration with a number of existing networks (represented in our team) that do not currently work together and have limited capacity to do food systems analysis. Hub Co-I Dr Immuong (Mahasarakham University) chairs the Sustainable Science Network of 15 Universities in five GMS countries itself a product of the regional IDRC/SSHRC Urban Climate Resilience in Southeast Asia (UCRSEA) partnership. The Asian Pacific Smallholder Producers network have provided access to their 28 groups in the GMS and Thailand-based multinational Charoen Pokphand Foods Public Company (£10.7 billion annual turnover) is a member of our HAB. SEI Asia leads SUMERNET, a network of 76 institutions including Government Departments, NGOs, CSOs and companies. HAB members coordinate two major policy networks via National Food Institute (Ministry of Industry, Thailand) and Food Innopolis (an ASEAN region food innovation platform). We also build on a network of government agencies and fisher organisations run by ASEAN Southeast Asia Fisheries Development Centre. We link these with inter- national networks Consumer Goods Forum and International Panel on Sustainable Food Systems.

**Training:** In addition to this network the Hub will: i) Feed into the development of curricula that support extension agencies to deliver services to smallholders e.g. extending Chiang Mai University and University of Mandalay's ongoing collaboration to develop training resources for research staff and graduate students across the region on food systems analysis; ii) Develop new research skills and leadership training linked to SDGs in collaboration with the Sustainable Science Network; iii) Extend across the Sustainable Science Network of Universities Mahasarakham University's 'Learning from you' co-productive programme of researchers embedded in local communities to create positive sustainable change; iv) Fund 18 PhD studentships via additional funding from UK HEI partners to run alongside the Hub, open to in-country applicants with each having an in-country and UK supervisor, to train a new generation of food systems thinkers.

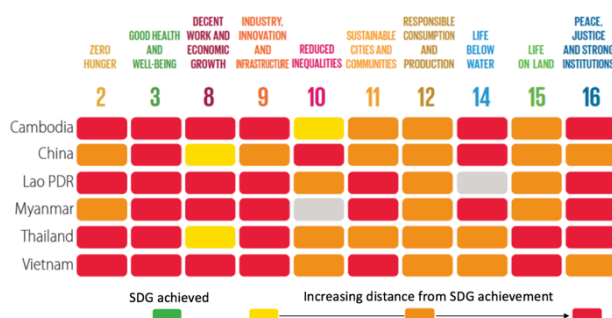
## ODA compliance statement

### 1. Which country/countries on the DAC list will directly benefit from this proposal?

The research is focused on the Greater Mekong Subregion (GMS) home to 356m people, particularly the least developed countries (Cambodia, Lao PDR, Myanmar) alongside Vietnam (Lower-Middle Income), and key trading (e.g. ASEAN Economic Community) and investment partners Thailand and Yunnan province of China (both upper middle income countries).

### 2. How is your proposal directly and primarily relevant to the development challenges?

The GMS has undergone profound and rapid socio-economic transformation during the last 20 years, which has lifted significant numbers of people out of extreme poverty. Yet this economic growth has been highly uneven and numerous development challenges remain across the whole region (see figure). The per capita GNI (2015) shows the economic imbalance across the GMS from Thailand (US\$15,520) at one end to Cambodia (US\$3,300) and Lao PDR (US\$324) at the other, with



significant proportions of people living off less than \$1.90 a day (34% Cambodia, 59% Lao PDR, >60% Myanmar, ADB 2017). Thailand has seen its Human Development Index ranking fall from 58 to 103 with growing numbers of rural and urban poor, and still significant prevalence of stunting in children under 5 (16%), a problem even greater across the GMS (44% in Lao PDR, 35% Myanmar, 32% Cambodia, ADB 2017). Hunger and under-nutrition in rural areas are going increasingly hand-in-hand with overweight and obesity - a "triple burden" of malnutrition (ASEAN 2017). Furthermore, the increases in agricultural and fisheries production have come at a significant environmental cost. Deforestation, agricultural intensification, expropriation of public land, and dramatic changes to river basins, floodplains and coastal zones have all contributed to a reduction in critical ecosystem services with approx. one quarter of GMS land severely degraded and another quarter moderately degraded (Shrestha and Roy, J. Environ. Inf. Sci. 2008, 36:29-38). Crucially, small-scale fishers and farmers, and particularly ethnic minorities in the uplands of all GMS countries, are consistently among the poorest and most vulnerable to climate change and other environmental stresses. This Hub will promote GMS food systems that protect the livelihoods of food producing communities while promoting environmental stewardship and ensuring people's sustained access to food that is safe, nutritious, and culturally appropriate.

### 3. How do you expect that the outcomes of your proposed activities will promote the economic development, health and social welfare of these country/countries?

The Hub will directly contribute to the principal food-related SDG targets (see figure). First, we will develop tools and methods to help national and regional policy makers and practitioners assess interventions for transformative food systems pathways, for a range of plausible futures, in an interdisciplinary collaborative manner. This will enable the GMS not only to qualify and quantify the beneficial impacts of interventions towards meeting development goals, but also measure the likely trade-offs and synergies between SDGs. We will build in-country capacity to develop and use such tools to enable on-going assessment in light of transformations and socioeconomic and environmental change and uncertainties. Our capacity building initiatives will upskill researchers, policy makers and the GMS food system workforce, and to develop strategies to achieve the SDGs and . Second, we will co-develop, in conjunction with GMS partner research organisations, new technologies/interventions and analyse the potential impacts of implementing the identified pathways towards a more sustainable food system. Examples of these are: policies to reduce food poverty, micronutrient deficiency and obesity, and promote healthier, more sustainable and equitable diets; new dietary interventions in urban areas to increase access of marginalised communities to high quality food; better agronomy and fisheries practices to enhance smallholder household incomes, food security, and reduce natural resource degradation; value chain innovations that reduce structural inequalities of gender, ethnicity/religion and income to improve access of vulnerable producer groups to national and international markets; and production of the first GMS Food System Sustainability Policy Plan.

# Transforming Greater Mekong Food Systems

SDG drivers



Intractable challenge: meeting growing needs of the GMS for stable & affordable access to high quality food that can be produced equitably & sustainably, despite social and economic change, natural resource constraints and rapid global environmental change

Years 1-5

Research outputs

**WP1:** Conceptual framework, mapping, foresight & foresight  
**WP2a Agriculture:** Experimentally assess soil, crop and livestock management interventions likely to increase productivity, enhance environmental sustainability and nutrition, and provide resilience to climate change

**WP2b Fisheries & Aquatic Resources:** Identify how key climatic and environmental drivers in the basins and resultant land use transitions impact fish stock productivity and provision in the GMS

**WP2c Food Supply Chains:** Understand how the existing structure of food supply chains influences regional livelihoods and food security and develop methods and tools can be developed to support GMS food chain transformations

**WP2d Diet and Health:** Assess drivers of malnutrition, overweight/obesity and dietary transitions in the different geographical areas and population subgroups to support consumers to improve food choices and use

**WP2e Livelihoods:** Assess trends, changes and trajectories in the GMS food system that have implications for rural livelihoods, scaling up survival mechanisms to improve rural food security, economic and social wellbeing

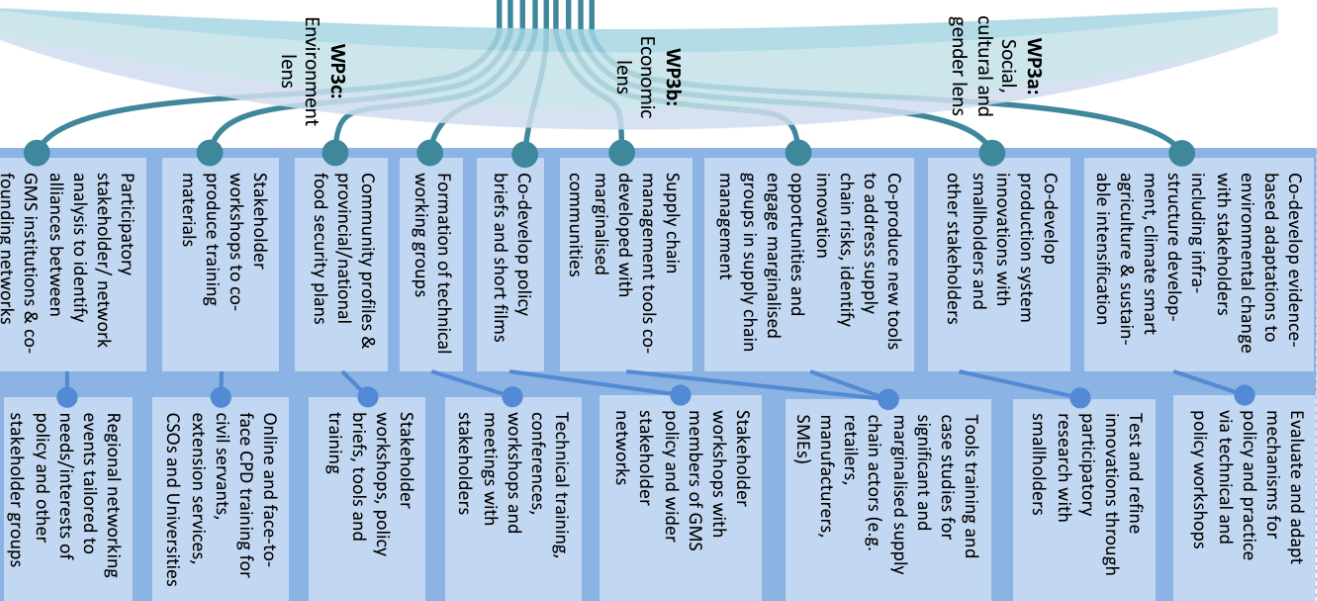
**WP2f Governance and Regulation:** Identify pathways to GMS food systems transformation on the basis of regional co-operation, democratic empowerment and inclusive governance

WP1: Use foresight methods to identify effective interventions within a range of futures, considering trade-offs & win-wins

Lenses

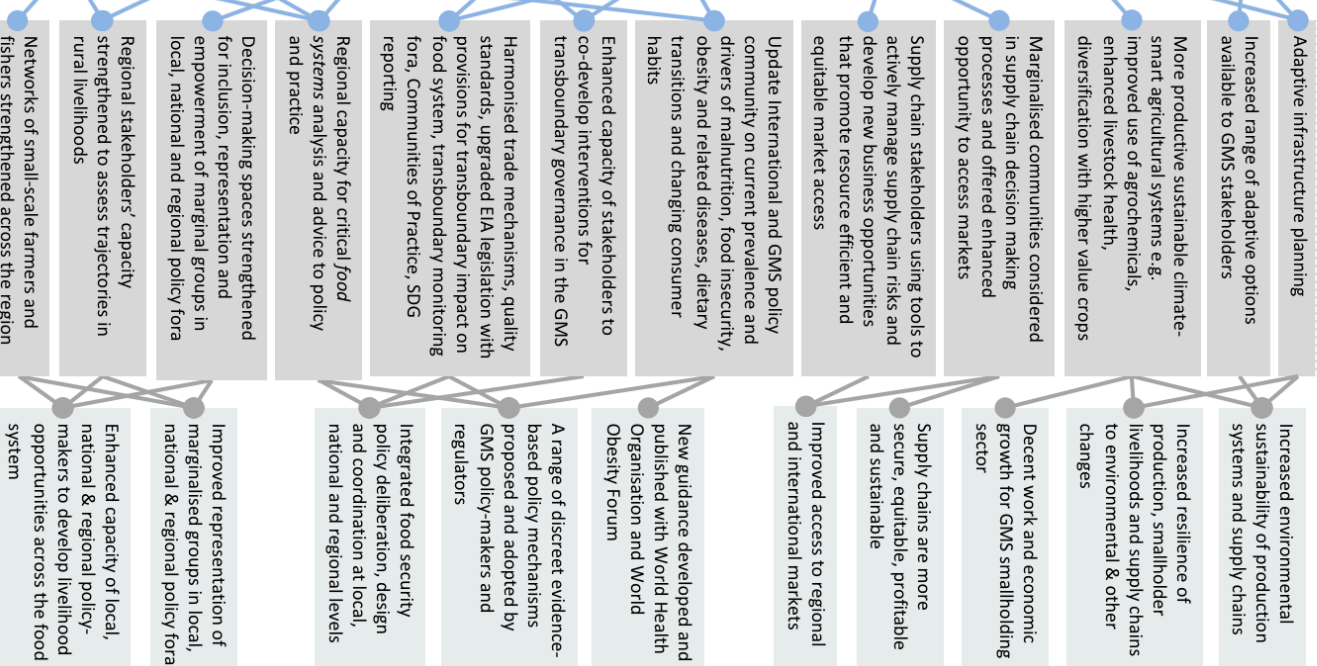
Years 1-3

Examples of tools, technologies and other impact-generating activities



Years 3-5

Examples of shorter-term outputs and impacts



Years 5-10

Longer-term impacts

GMS rural and urban poor are resilient to environmental change in a rapidly changing food system

**Sustainable economic growth** is driven via improved productivity, access to markets and reduced supply chain risk

**Improved health and wellbeing** by reducing food and nutrition poverty, inequality and insecurity

**Rural and urban poor are empowered** to participate in improved food system governance that protects the interests of vulnerable groups

Food systems approach: building capacity in food systems analysis to assess transitions and transformative pathways and co-design research and interventions to implement these pathways