

## Report on the Transboundary Dialogue on agricultural pressures on wetlands in the Mekong Delta

28-30 September 2022 in Kampot, Cambodia



### Summary

The Transboundary Dialogue workshop brought together stakeholders and experts from government, civil society and academia from Cambodia and Viet Nam to explore the impacts of unsustainable agriculture in the Mekong Delta and propose pathways to a more sustainable future.

Participants explored the drivers of intensive rice agriculture and the current impacts on natural wetlands and local people. Current practices, policies and challenges were reviewed, and ongoing pilot schemes were presented and discussed. Participants identified the key elements that would be needed to scale transition to sustainable agriculture across the Cambodian and Vietnamese delta

- Recommendation 1: Strictly **protect the remaining natural grasslands** in the Cambodian portion of the delta. The official narrative is that encroachment into these areas is driven by poverty. But further analysis indicates that poverty is only part of the problem. The key driver of grassland loss is land use speculation whereby farmers, bankrupted by the extra costs needed to intensify rice production, sell out to wealthy land owners and then move into the last remaining natural grassland areas. This dynamic is reflected by the fact that land use zoning for Boeung Prek Lapouv, a key protected grassland in Cambodia, has been underway since 2016 with no obvious conclusion in sight. A similar process is underway in Phu My Nature Reserve in Kien Giang Province, Viet Nam.



- Recommendation 2: Enhance **dialogue** between Cambodia and Viet Nam to implement effective strategies for wetland wise use in the Mekong Delta. Policies must be consistent between water, climate, conservation and agricultural sectors. The decisions that each country is currently making are having impact on the other. For example, Vietnamese policies to move away from intensive rice have opened up a gap in the low-value market segment that is now being filled by Cambodian farmers. If Cambodia chooses to intensify in a similar way to Viet Nam, there will be major implications for water security and flooding in Viet Nam. In Viet Nam, a Mekong Delta Working Group that includes development partners and NGOs was established in 2014 to coordinate and lead dialogue with government. A similar platform should be established in Cambodia.
- Recommendation 3: Build a greater **knowledge** base around transboundary water storage and security in the Mekong Delta. Understanding development and conservation priorities will allow the projection of future water needs for both countries. Water security, both in terms of volume and quality, will be affected by actions across the delta. It is important to understand the projected future water storage gap. In addition to this, it is vital to understand the potential for ground water to become polluted if agricultural intensification continues, and the impact this would have on health and the economy.
- Recommendation 4: There is a need for **integrated planning** for the Mekong Delta in order to promote partnership building, engagement and collaboration and to improve nature-based solutions in the region. It is clear the stresses on the delta are multi-fold, and the development context and challenges are different between Cambodia and Viet Nam. But the actions of one country affect the other, and the solutions are likely to require a scale of action that presents greater opportunities if countries work together. A subset of the Viet Nam and Cambodia policy dialogue bodies (see #2) could form a transboundary working group to define a long-term vision for land and water use in the delta that avoids replicating Viet Nam's mistakes in Cambodia.

## Context

The Mekong Delta is a heavily modified landscape. Land-use changes for rice agriculture have left only isolated pockets of natural wetlands. Of those that are left, all are in some way impacted by the consequences of agriculture, from altered hydrology due to artificial infrastructure (e.g. canals and dykes), to pollution from chemical inputs.

In the Vietnamese upper delta the intensification of agriculture has disrupted the seasonal flood pulse, increasing flood risk, and polluting water to the point where it is unsafe for human use. Rice yields have stagnated in recent years, whilst the underlying costs of rice production remain



high, both in-terms of direct costs (e.g. chemical inputs, machinery and labour) but importantly also indirect costs, especially in terms of investments and operations of water infrastructure, the costs of water pollution for human health and industry, and the high methane gas emissions. Viet Nam is a highly food secure country and the majority (70%) of rice now exported, but the net value added from this exported rice is low. Put simply, the direct and hidden costs of agricultural intensification are substantial, and there could be greater benefits from other, more environmentally sensitive land-uses.

The government of Vietnam has recognized the negative consequences of rice intensification and, under Government Resolution 120 for a Sustainable and Climate Resilient Mekong Delta, dated Nov 2017, and backed-up by Communist Party of Vietnam (CPV) Resolution 13 in April 2022, provincial governments are taking action to conserve and restore the ecosystem functions of the floodplain. They are transitioning from three to two crops per year, restoring ecosystem functions, while also moving to reduce the use of pesticides through higher value clean/organic agriculture including flood-based crops.

In the Cambodian Mekong Delta, rice is also widespread and there are ever-present challenges of encroachment, overuse of chemical inputs, and irrigation reducing storage capacity of natural wetlands and increasing downstream flood and drought risk. However, rice agriculture is still much less intensive, with the majority of farmers still sowing one or two crops of low value rice per year, compared to wide-spread triple cropping in Viet Nam (see Figure 1). There are extensive canal networks in Cambodia, but the large dyke infrastructure that was built to grow the third rice crop are absent. Whilst there is only around 2% of natural wetland remaining in the upper Vietnamese delta, about 10% is still found in the Cambodian delta (see Figure 1).

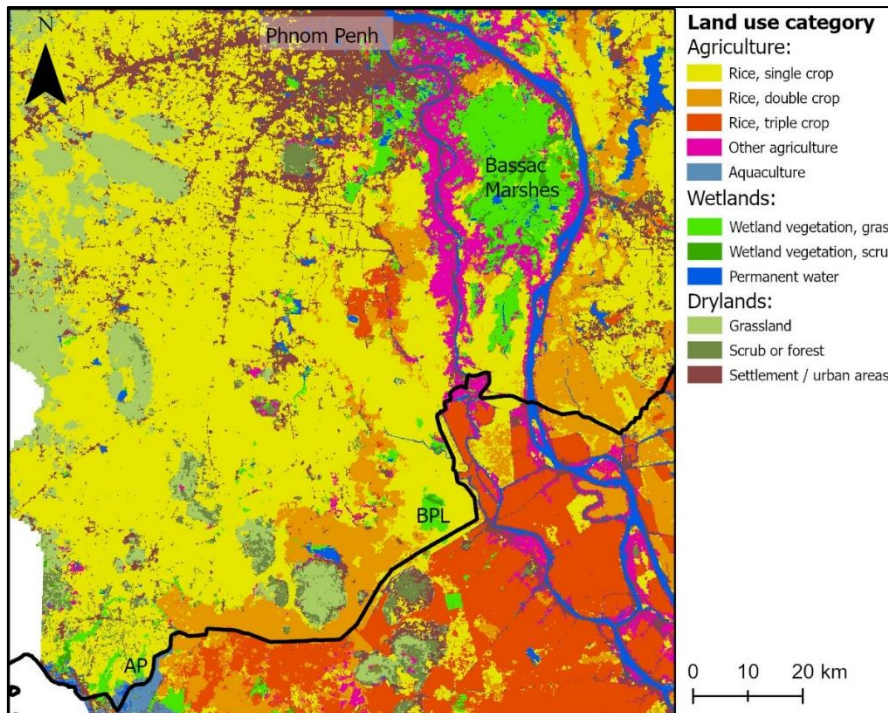


Figure 1. Land use in the CLMD in 2020. This classification is based on satellite images dated from Jan to Dec 2020. BPL = Boeung Prek Lapouv Protected Landscape; AP = Anlung Pring Protected Landscape.

A Transboundary Dialogue on agricultural pressures on wetlands in the Mekong Delta was held in Kampot Province, Cambodia in September 2022. Over a two-day workshop and subsequent one day field trip to a sustainable rice programme around Anlung Pring Protected Landscape in Kampot Province, it brought together representatives from Vietnamese and Cambodian central and regional governments, academia, civil society organisations, and development partners. Participants presented and shared knowledge and experiences of the drivers and consequences of agricultural intensification in the Mekong Delta. Pilot schemes for sustainable agriculture were identified and appraised, and participants interrogated the barriers that must be overcome to scale transition to widespread environmentally sensitive land-uses.

## Workshop Sessions

### Welcomes & Introductions

The day started with His Excellency, Ney Kong, the Kampot Deputy Provincial Governor, welcoming participants to workshop. After an introduction to the workshop by Tomos Avent, Head of International Programmes at the Wildfowl & Wetlands Trust (WWT), Dr Srey Sunleang, the Deputy Director General and the General Directorate of Natural Protected Area of the Cambodian Ministry of Environment provided the opening speech. The context of the workshop was then presented by Jake Brunner, the Head of IUCN's Lower Mekong Sub-region.



### **Wetlands, Agriculture and water security – a global perspective**

To provide a wider perspective on global impact of farming practices on wetlands, and share case studies of pathways to sustainability, Dr Hugh Robertson of the Ramsar Scientific & Technical Review Panel (STRP) gave an online presentation on the recent STRP [Briefing Note on Wetlands and Agriculture](#). This Briefing Note synthesises knowledge from global assessment reports and compiles information on the impacts of agricultural systems and practices on wetlands. The Briefing Note is also a useful source of information of the effects of agricultural development on Ramsar Sites, and provides case studies that highlight pathways to sustainable agriculture to protect wetlands. Finally the Briefing Note provides policy recommendations for agricultural and wetland sectors.

Dr Robertson presented a very relevant example of Stork friendly rice farming, Japan: Using market mechanisms to promote sustainable agriculture.

Some critical recommendations relevant to the workshop were to:

- Enhance dialogue between sectors to implement effective strategies for wetland wise use
- Ensure policies are consistent between water, climate, conservation and agricultural sectors and deliver on Sustainable Development Goals
- Apply transformative actions for sustainable agriculture and wetland wise use
- Develop 5 and a 30 Year Visions for the Delta (HR), prioritise efforts to those which will likely have the highest impact, and develop an active transboundary interdisciplinary forum to coordinate work.

Another external speaker, William Rex of the International Water Management Institute (IWMI) shared a virtual presentation on water storage, security, and services. This highlighted a 40% decline in global water storage in wetlands over the last 50 years (equalling approximately 27 billion m<sup>3</sup>), but a 40% increase in water stored in paddy fields over the same period, highlighting the global challenge relevant to the topic of this workshop. Critically, water storage is becoming a major global issue, and will be an ever-increasing challenge in the Mekong Delta. The quality of water being stored is also a significant issue in the Mekong Delta. Agricultural chemicals are currently polluting surface water. This has substantial human health impacts, but there is also an even greater risk that groundwater may become polluted. Households and businesses (especially bottling plants) increasingly depend upon these water sources, and the consequences on groundwater pollution in the Delta would be immense.

It is vital to understand long-term needs (disaggregated into key services, but acknowledging overlaps), map and measure the current storage and the quality of water being stored, and

identify and model a range of potential options for filling the ‘storage gap’, which includes the value of natural systems. Organisations like IWMI, and the wider CGIAR partnership are addressing these challenges, and opportunities to collaborate were identified.

### **Status of wetlands and agriculture in the Delta**

Hong Chamnan, Director of Department of Freshwater Wetland Conservation (Cambodia Ministry of Environment) and Tomos Avent, WWT, shared information on the state of wetlands in the Cambodian Mekong Delta, including the protected status of three sites, Anlung Pring, Boeung Prek Lapouv, and Toul Pantaley Boeung Sna. Maps were used to illustrate soil types and elevation in the delta, with the low-lying alluvial soils most productive for rice agriculture (Figure 2). WWT assessments also produced a map to highlight the extent of wetland loss since 1990 (Figure 3. NB: much of the natural vegetation in the Vietnamese Delta had already been lost prior to 1990).

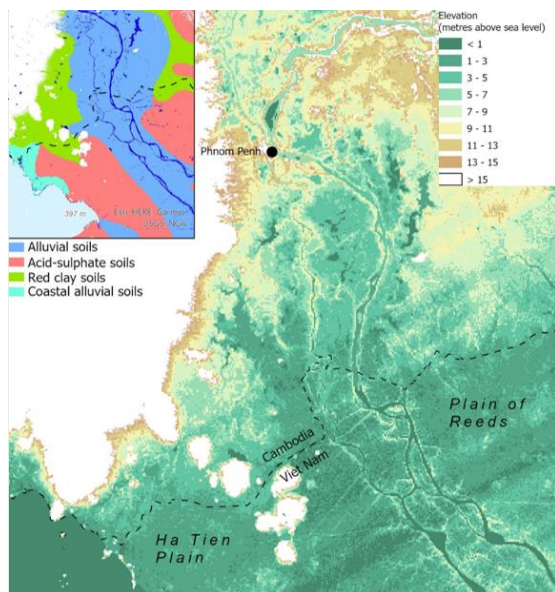


Figure 2. Elevation model of the Mekong Delta. Inset: Soil map for the Delta (Elevation from Shuttle Radar Topography Mission (SRTM), NASA 2002. Soil map based on Harmonised World Soil Database (HWSD) v1.2.

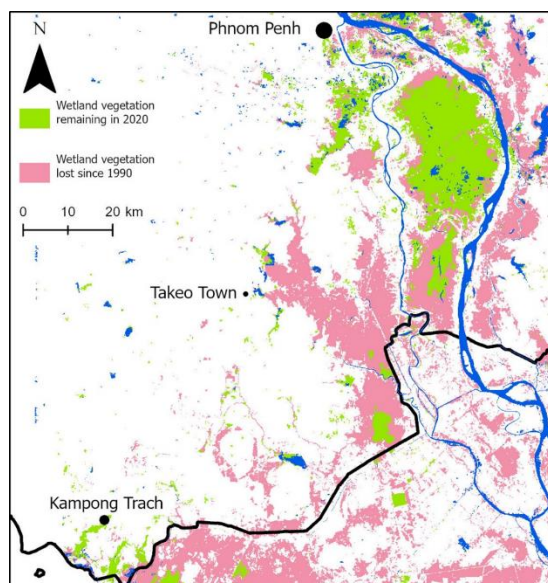


Figure 3. Wetland vegetation loss in the Cambodian Lower Mekong Delta

Results from WWT and MoE assessments of the biodiversity and ecosystem service value of remaining wetlands were also presented.

A presentation from the Ministry of Agriculture, Forestry & Fisheries (MAFF) shared information on trends in agriculture in Cambodia. Between 2015 and 2020, the proportion of the total labour force engaged in agriculture decreased by 6% (from 41.5% to 35.5%), continuing previous declines, and this trend is predicted to continue. The previous Agricultural Sector Strategic Development Plan, and the upcoming Agriculture Development Policy 2022-2030 have climate resilience and sustainability among their core principles, but current approaches to adapt to, and mitigate impacts from, climate change often focus on increased infrastructure, rather than exploring transitions to more sustainable approaches. This is a challenge that we all must be aware of, as it could lead Cambodia to go down similar approaches to those used in Viet Nam, the result of which will be the same as the results that Viet Nam now tries to rectify.

The National Action Program (NAP) to Combat Land Degradation 2018-2027 aims to contribute to preventing and solving land degradation problems under the obligation in the United Nations Convention to Combat Desertification (UNCCD). The NAP is coordinated by a permanent secretariat under the leadership of MAFF and presents an opportunity for stakeholders in this workshop to engage with MAFF. The Department of Agricultural Land Resources Management (DALRM) within the General Directorate of Agriculture (GDA) also presents positive opportunities to engage with MAFF. Finally, a number of maps were shown to highlight the potential suitability of different crops in Cambodia, with cashew nuts identified as suitable for some parts of the delta (see Figure 4).

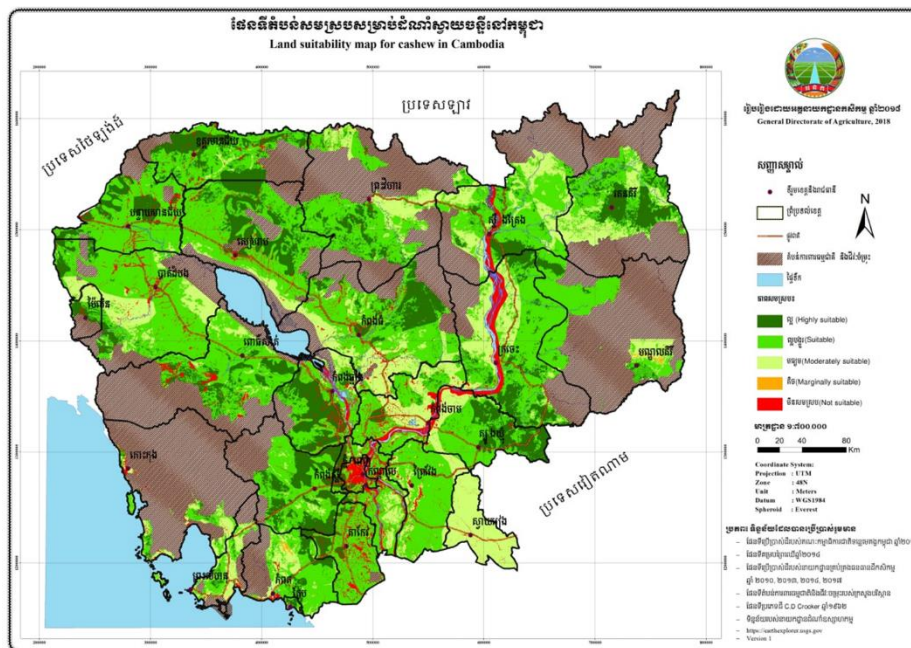


Figure 4 Land suitability map for cashew nuts crops in Cambodia (MAFF 2018).

To provide an overview of the current state of agriculture and wetlands in the Vietnamese upper Mekong Delta, Andrew Wyatt of IUCN first presented a historical analysis of the drivers of wetland degradation. This showed a rapid expansion of land cultivated for rice in the first three decades on the 20<sup>th</sup> Century, towards the end of French colonisation. As the population rapidly increased in the second part of the 20<sup>th</sup> Century, so too did the network of canals and irrigation infrastructure, particularly so from the 1980s onwards. National policies encouraged intensification to ensure food security and build a strong export market, and were supported by major international investment. Between 2000 and 2011, major infrastructure projects to control water levels, thus enabling three crops of rice per year, reduced the total flood storage volume in the upper Vietnamese Mekong Delta from 9,200 billion m<sup>3</sup> to 4,700 billion m<sup>3</sup>. Figure 5 provides a clear illustration of the impact of high dyke infrastructure on the landscape. This intensification in has created widespread flooding in towns throughout the Delta, resulting in millions of dollars of economic damage. There is a lost fisheries value of approximately \$1,000 USD/ha/yr. US\$15 million/yr of free fertilisation is lost when the high dykes prevent fertile sediments from being deposited. There are also consequences through increase subsidence. All of this is increasing social inequality. Natural wetlands have been lost to agriculture, with less than 3% of the 'natural' landscape of the delta remaining. Remaining sites, like Phu My Species and Habitat Conservation Area continue to be encroached for rice.

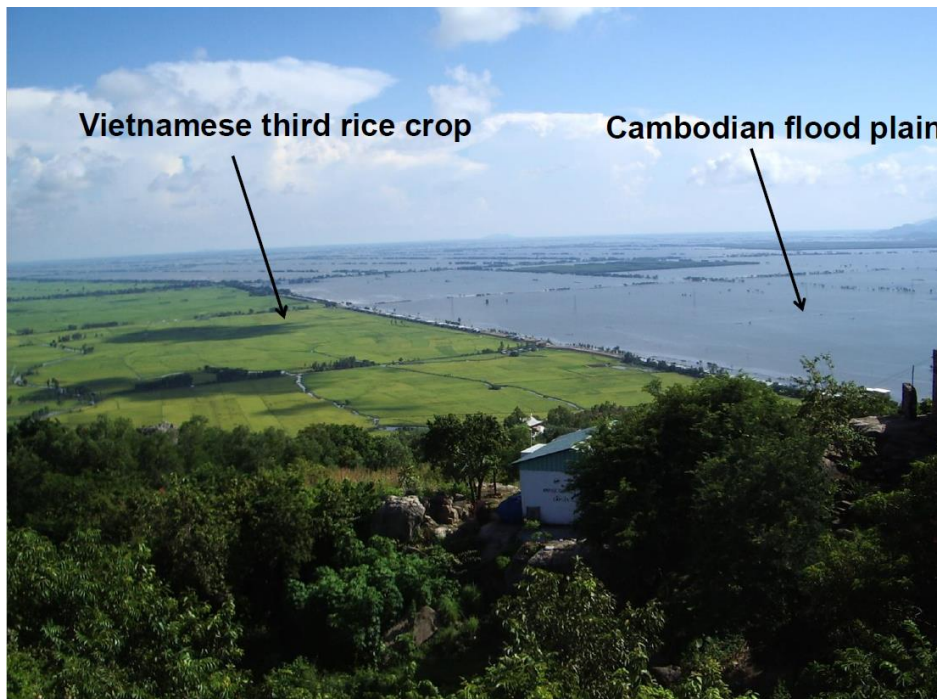


Figure 5. A photograph of the border between Viet Nam and Cambodia, showing the impact of high dyke infrastructure during the flood season.





Recent policies are trying to address these issues. Sub regional planning for Dong Thap, Long An, Tien Giang aimed to phase out official support for the 3rd rice crop in favour of high value organic flood-based agriculture (The Plain of Reeds Strategic Directions – conducted under PM Decision 593). This aims to restore the ecosystem functions of the flood plain to absorb floods as well as to moderate salinity intrusion in the downstream province of Tien Giang. Then in November 2017, National Resolution 120 created a national policy change calling for a shift from intensive rice agriculture production to diversified agricultural industry in the Mekong Delta. It called for models of nature-based adaptation and environmentally sound sustainable development on the basis of actively living with the flood. The Mekong Delta Integrated Regional Plan (2022) provides a clearer road map for agro-ecological transitions to be resilient for a changing climate.

### **Drivers of unsustainable agriculture and a projecting future scenarios**

In breakout groups, participants were asked to identify and interrogate the drivers of unsustainable agriculture, and explore the current and potential consequences, especially thinking about who the winners and losers are.

#### *Demands*

- Increases in population (more people to feed) and desires to improve quality of life
- National desire/policies for food security and meeting Sustainable Development Goals (SDGs)
- Increased opportunity through export markets, and investment from private sector
- Government-supported companies in Viet Nam able to negotiate monopolies of rice for export so major pushes for increasing productivity
- In Cambodia, traditional low yield rice varieties for local consumption are being replaced by high yield varieties for export to Viet Nam. These varieties require greater chemical inputs. Poor farmers often have to borrow money for these inputs, using their farms as collateral, and as a result are more susceptible to losing their lands. This can drive encroachment into natural areas. Encroached land, can, over time be sold to land speculators, who pay for irrigation infrastructure and look for ways to legitimize and legalise their land through local government.
- Donors have vested interest to deliver returns, leading to easy financing for infrastructure (canals etc)

#### *Enabling conditions*

- Favourable environment for farming



- Availability of technology/equipment/chemicals to help optimise productivity. The decreases labour need, so more capacity available for other things (e.g. intensification)
- Increased infrastructure (e.g. canals and dykes) open up more opportunity
- Easy access to loans/microfinance
- Availability of seeds

#### *Other factors*

- Over application of chemical inputs due to:
  - o Instructions often written in foreign languages (often Vietnamese so application in Cambodia can be wrong)
  - o Lack of regulation around use
  - o Ease of availability
  - o New rice varieties requiring more pesticides and fertilizers
- Implications for common resources (e.g. ecosystem services) are less important to the individual than direct income from rice
- Increased value of land leads to greater encroachment (especially if farmers sell off their land and then want more)
- Hydrological changes (dams). Decrease waterflow and sedimentation. This decreases water and soil quality leading to decreases in yields. This can lead to encroachment, as farmers seek to increase land area to compensate.
- As natural habitat has already been converted, there was little option to increase the amount of land being farmed, so the only other option to increase outputs was to intensify (this happened in 1990s in Viet Nam, and potentially starting to become an issue in Cambodia).
- Ministries with vested interest accessing finance for infrastructure (need to explore)

#### **Consequences**

- Environmental degradation of soil and water quality
- Habitat loss
- Biodiversity loss / risk of species extinction
- Decrease in aquatic stocks
- Increase in flood risk
- Pollution and impacts on human health
- Higher vulnerability to climate change
- Productivity reaches limits / reduced production
- Cost of production increases
- Unstable markets



- Immigration from rural to urban areas, especially young people of working age, with elders staying in villages to look after children
- Social issues (increase in conflict, crime, insecurity, and decrease in solidarity). Impacts on cultures, including indigenous people and their traditions
- Gender inequality.

| Winners  | Losers   |
|--|--|
| Business traders/buyers (short-term)   | Protected areas (biodiversity)   |
| Input suppliers (seeds, chemicals, machinery) and service providers (e.g. pumpers) | Tax payers (e.g. US tax payers who fund the loans and investments for intensification).<br>Not best use of funds             |
| Construction companies   | Bottling companies that rely on clean water supplies for their production  |
| Policy makers with vested interests  | Farmers and consumer health  |
| Powerful people with money to encroach   | Vulnerable groups  |
| Government (short-term)  | Government (long-term)   |
| Farmers (short-term)   | Farmers (small-scale), especially those who have needed high investment and will need higher investments and yields decrease |
| Consumers (short-term)   | Wetland users (those relying on natural resources)   |
| Land investors   | Land-owners who can get into debt after contracting loans using land as collateral as land productivity then decreases       |
|  | Farmers in Africa being undercut by farmers in Asia  |

**Alternatives to unsustainable rice farming**

Flood-based livelihoods are being trialled throughout the Mekong Delta. This session was to showcase examples from Viet Nam, and to get participants to list schemes that they have been involved in or were aware of. As shown in Figure 6, some of these approaches can be highly profitable.

*Sustainable Rice Platform (SRP)*

- Being encouraged in the Cambodian delta at the moment
- Could still be done as triple-cropped, so still wouldn't be sustainable in IUCN's interpretation



#### *System of Rice Intensification (SRI)*

- Trailed in Cambodia but farmers lost interest due to increased labour efforts

#### *Floating rice (e.g. Oryza sativa L.)*

- Short grain type
- Trials in An Giang Province (GIZ, 2014) and Long An Province (IUCN, 2020)
- Nutritional and safe food in Viet Nam in the past
- Low yield; flood adaptation;
- Minimal or no use of agricultural chemicals
- High in protein, lipid, vitamin B1, vitamin E and anthocyanin.
- New value-added products from flood-based crops
  - o Cookies
  - o Drinks (and drinking powder)
  - o Tea (with moringa)
  - o Puff rice
  - o Rice wine
  - o Paper cake
  - o Ready to eat rice (Viet Nam or export market): retort (packed and sterilized); canned, frozen.

#### *Asian Development Bank's Climate Resilient Rice Programme*

- [The Climate Resilient Rice Commercialization Sector Development Program \(Rice-SDP\) in Cambodia \(ADB TA 44321-013 CAM\). In Kampong Trabek District, Prey Veng Province](#)

#### *Wildlife friendly rice*

- Crane friendly rice (being trialled in Anlung Pring, Cambodia)

#### *Rice + Fish/Shrimp/Vegetable models*

- 2 rice crops + 1 floating rice and community based fishing ((wild integrated stocks - fish, shrimp) during flood season (An Giang, Viet Nam)
- 2 rice/vegetable crops + fish farming during flood season (Dong Thap, Viet Nam)
- 2 rice crops + community-based fish trapping
- Winter-spring rice crop + floating rice integrated with fish/shrimp farming in flood season (Dong Thap, Viet Nam)
- 2 rice crops + fish/duck/aquatic vegetables (e.g. mimosa and water lilies)
- 1 organic rice + aquaculture (fish/shrimp)
- Winter-Spring rice crop + Summer-Autumn Lotus + Community-based fishing in flood season (An Giang, Viet Nam)



- 2 rice crops + 1 crop of giant freshwater prawn during flood season (Dong Thap, Viet Nam)
- 2 rice crops and Winter-Spring rice crop in rotation with giant prawn (An Giang, Viet Nam)
- 1 rice crop + 1 mung bean crop (being trialled at Anlung Pring, Cambodia)

#### *Alternatives crops*

- 1 veg crop (e.g. soy, chillies) + fish
- Aquaculture. Examples of catfish have been shown to be 3x more profitable than rice.
- Intensive flower farming (lotus, lilies)
- Tourism
- Frog farming
- Coconut farming
- Water chestnut, Mimosa, Sesbania collection
- Buffalo farming
- High-value lotus silk yarn (Long An, Dong Thap and An Giang, Viet Nam)
- Traditional medicines
- Water hyacinth and bulrush harvesting for weaving handicrafts

#### *Coastal examples*

- Rice-Shrimp systems in coastal areas (Bac Lieu, Viet Nam)
- Shrimp and Mangrove Forest Protection schemes around coastal systems (Ca Mau, Viet Nam)

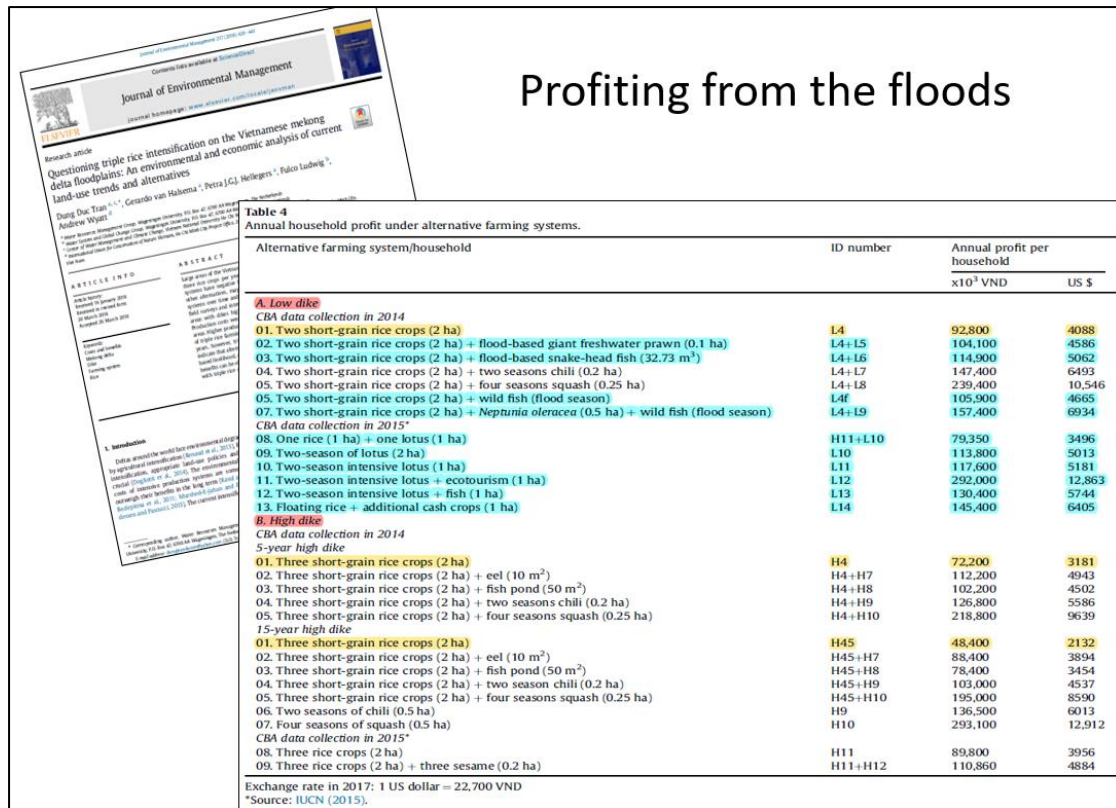


Figure 6. A Table showing annual household profits under alternative farming schemes. Taken from Tran DD et al (2018). Questioning triple rice intensification on the Vietnamese mekong delta floodplains: An environmental and economic analysis of current land-use trends and alternatives. J Environ Manage. doi: 10.1016/j.jenvman.2018.03.116.

### Barriers to sustainable transitions

Participants explored the barriers that were preventing some of the relatively small-scale schemes (listed in the section above) from being rolled-out across the Delta. Essentially, the question was, if sustainable schemes can be more profitable and better for the environment, why aren't they dominating the landscape?

The barriers identified are listed below:

#### *Fear of the unknown*

- Farmers in the Mekong Delta are often poor, and are scared to diversify at a large scale. Some are willing to pilot new approaches on a proportion of their land. Farmers would generally prefer to do this if there was some sort of guarantee scheme in place.



- Viet Nam is now importing low value, high yield unsustainable rice varieties from Cambodia, so the market is low value, but relatively reliable.
- Approaches are rarely bottom up, instead introduced by external parties, which can result in slow behavioural change.
- Concern flood-based product prices will go down as supply increases.

#### *Farmer awareness and capacity*

- Farmers do not know what alternatives are available, and/or do not have the skills/resources to adopt new models
- Few wide-spread training schemes available
- Lack of established management and good local governance mechanisms

#### *Geographical specificity of methods*

- Differences in dyke infrastructure in different areas mean that not all areas are suitable for similar approaches:
  - o High dykes which aim to completely hold back floodwater
  - o Low dykes that over top during floods
- Floating rice needs infrastructure as it is vulnerable to variable flooding
- Different soil types and conditions mean models are limited to specific areas
- Quality of water and soil is not stable

#### *Policies and mechanisms required to support transitions are not yet in place*

- Rapid/reliable transportation to markets is needed (e.g. for vegetables)
- Certification schemes need to be introduced to ensure food safety to comply with Western market demand
- Access to export markets is limited and private sector partnerships are currently immature
- Milling facilities must be able to deal with new and more varied rice varieties
- Small quantity of products of variable standards at the present time
- Unstable markets (especially poorly established markets)
- Lack of options for organic fertilizer products in the delta
- Unproven pest control

#### *Financing*

- High initial investment is needed for transitions to new approaches
- Agricultural insurance needed

It was also noted that there is a lack of an integrated masterplan and collaboration for environmentally sustainable transitions in the Mekong Delta. Short-term thinking has often



dominated longer-term strategic planning. This is greatly needed if the barriers listed above are to be overcome.

### **Overcoming barriers to sustainable transitions**

Participants worked through the barriers identified in the Section above, and proposed potential solutions.

#### *Institutional solutions*

- Need to work at landscape level, not just in and around PAs
- Enhance regional cooperation/diplomacy
- Need a Masterplan for Cambodia
- Need to engage key donors
  - o Dutch and World Bank coalition made the big difference in Vietnam
  - o AFD and ADB are key donors that we know about in Cambodia
  - o Global Environment Facility (GEF)
- Resilience to external impacts
  - o Climate change and water retention in China create uncertainty and risk
  - o Cambodia and Vietnam need to work at a catchment level and engage with other countries.
  - o Cambodia should commit to zero damming
  - o Climate change resilience plans should include transboundary solutions between Cambodia and Vietnam, and should incorporate nature-based solutions
  - o Climate change adaptation plans must focus on sustainable agriculture, not canal building
- Input into other development plans to ensure roads/canals are well considered
- Improving infrastructure for flood friendly alternatives (e.g. overflow 1m dykes)
- Increase public/private investment.
- Ensure government budget has been used to prioritise sustainable agriculture
- Policies to incentivise well-functioning cooperatives
- Policies to support subsidies for sustainable agriculture

#### *Knowledge/Research gaps*

- Surface water pollution
  - o Does polluted surface water connect to the ground water?





- Large infrastructure doesn't yet exist in Cambodia, but sponge capacity of the delta is decreasing because of so many canals

#### *Market development*

- Support value chain development
- Labelling for chemical free products

#### *Farmer support*

- Pilot projects where farmers get premiums. Purchase guarantees
- Capacity building programmes
- Contract farmer groups at local scales

#### **Funding collaborative action**

The workshop did not go into detail on funding mechanisms for large-scale collaborative action, but there were presentations outlining two potential opportunities for planning and implementing sustainable agriculture schemes in the Mekong Delta.

Mark Dubois of the International Water Management Institute (IWMI) shared information on the Transformative Futures for Water Security programme, a series of multi-stakeholder dialogues for action on water security. In March 2023, the UN will hold a Water Conference in New York bringing together policy, business, development and science communities to catalyze high ambition. In the build up to this, IWMI is developing 5-6 high-ambition missions for science-based action on water security. Through strengthened partnerships, each of these high-ambition missions aims to bridge the gap between science, policy, business, and development. IWMI are currently looking for Regional Co-convenors for these missions, and there could be an opportunity for missions around sustainable agriculture, where we would represent voices and priorities from the Mekong Delta. The exploration phase for this programme runs from mid-Oct to mid-Dec.

Ding Li Yong of Birdlife International shared details of a new major funding programme for wetland conservation in the region, the Asian Development Bank's Regional Flyway Initiative (RFI). The RFI has two main funding components; an investment pipeline of \$1.5 – 3 billion to support 50-100 projects over 20+ years through loan-driven/blended finance to government, and a smaller complementary grant funding mechanism targeting civil society organisations. The initiative is currently in the development phase. The investments will focus on wetland restoration, but wider action addressing threats could also qualify for financing. Tram Chim (Viet Nam), Boeung Prek Lapouv and Anlung Pring (Cambodia) have all been identified as priority



sites, so there may be opportunity for the priorities identified within this workshop to be addressed through the RFI.

## Annex 1: Meeting Agenda

| Time                                       | Session  |
|--|--|
| <b>Wednesday 28<sup>th</sup> September</b> |  |
| 08:30 – 09:00                              | <b>Registration</b><br>WWT-Cambodia  |
| 09:00 – 09:02                              | <b>Cambodia National Anthem</b>  |
| 09:02 – 09:10                              | <b>Welcome remarks</b><br>H.E. Ney Kong<br>Kampot Deputy Provincial Governor   |
| 09:10 – 09:20                              | <b>Key Remarks</b><br>Tomos Avent, Wildfowl & Wetlands Trust (WWT)   |
| 09:20 – 09:35                              | <b>Opening Speech</b><br>Dr Srey Sunleang, Deputy Director General, General Directorate of Natural Protected Area, Ministry of Environment   |
| 09:35 – 09:50                              | <b>Scene setting</b><br>Jake Brunner, IUCN   |
| 09:50 – 10:10                              | <b>Workshop Q&amp;As and participant introduction</b>  |
| 10:10 – 10:30                              | Group Photo and Coffee Break   |
| 10:30 – 11:00                              | <b>Ramsar Briefing Note on wetlands and agriculture</b><br>Hugh Robertson, Ramsar Scientific & Technical Review Panel (STRP).<br><i>Virtual presentation</i>   |
| 11:00 – 12:00                              | <b>Policy Frameworks for Wetland Conservation in Cambodia and the Wetlands of the Cambodian Mekong Delta</b><br>Hong Chamnan, Director of Department of Freshwater Wetland Conservation & Tomos Avent, WWT |
| 12:00 – 13:00                              | Lunch  |
| 13:00 – 14:00                              | <b>Wetlands and agriculture the Vietnamese Mekong Delta</b><br>Andrew Wyatt, IUCN  |
| 14:00 – 14:30                              | <b>Water storage, security, and services</b><br>William Rex, International Water Management Institute (IWMI)<br><i>Virtual presentation</i>  |

| Time                                      | Session  |
|---|--|
| 14:30 – 14:45                             | Coffee Break   |
| 14:45 – 15:15                             | <b>Policy frameworks for agriculture in the Cambodian Delta. Historical Trends and current policy</b><br>Ministry of Agriculture, Forestry & Fisheries, Cambodia   |
| 15:15 – 17:00                             | <b>A Horizon Scan Session 1. Exploring the drivers of unsustainable agriculture and a projecting future scenarios</b><br>IUCN & WWT – Mixed group workshop sessions  |
| <b>Thursday 29<sup>th</sup> September</b> |  |
| 09:00 – 09:45                             | <b>A Horizon Scan Session 2. Exploring the drivers of unsustainable agriculture and a projecting future scenarios</b><br>IUCN & WWT – Mixed group workshop sessions  |
| 09:45 – 10:15                             | <b>Asian Development Bank's Regional Flyway Initiative</b><br>Ding Li Yong, Birdlife International   |
| 10:15 – 10:30                             | Coffee Break   |
| 10:30 – 10:45                             | <b>Transformative Futures for Water Security - Multi-stakeholder dialogues for action on water security</b><br>Mark Dubois, International Water Management Institute (IWMI)<br><i>Virtual presentation</i> |
| 10:45 – 12:00                             | <b>Advances in sustainable wetland agriculture – Case studies from the Mekong Delta</b><br>Andrew Wyatt, Facilitator, IUCN   |
| 12:00 – 13:00                             | Lunch  |
| 13:00 – 14:30                             | <b>Barriers to sustainable transitions</b><br>IUCN & WWT – Mixed group workshop sessions   |
| 14:30 – 16:00                             | <b>Overcoming barriers</b><br>IUCN & WWT – Mixed group workshop sessions   |
| 16:00 – 16:10                             | <b>Introduction to Anlung Pring Protected Landscape</b><br>Yorth Bunny, WWT  |
| 16:10 – 16:30                             | <b>Conclusions and Close</b>   |



| Time                                    | Session  |
|---|--|
| <b>Friday 30<sup>th</sup> September</b> |  |
| 07:30                                   | Depart from Kampot to Anlung Pring Protected Landscape   |
| 12:00 – 13:00                           | Lunch at Anlung Pring Community-based Ecotourism project |
| 13:00                                   | Depart Anlung Pring Protected Landscape                  |

## Annex 2: Participant List

| Organisation/Institute   | Name          |
|--|---------------|
| General Directorate of Natural Protected Area, Ministry of Environment   | Srey Sunleang |
| Department of Freshwater Wetlands Conservation, Ministry of Environment  | Hong Chamnan  |
| Department of Freshwater Wetlands Conservation, Ministry of Environment  | Pen Sokmean   |
| General Directorate of Natural Protected Area, Ministry of Environment   | Vav Koemsrun  |
| Department of Community Livelihood, Ministry of Environment  | Phok Samphos  |
| Department of Water Quality Management, Ministry of Environment  | Seng Kry      |
| Department of Climate Change, Ministry of Environment  | Sim Touch     |
| Department of Agriculture land resource management of General Department of Agriculture, Ministry of Agriculture, Forestry and Fisheries | Am Phirum     |
| Fishery Administration, Ministry of Agriculture, Forestry and Fisheries  | Seng Leang    |
| Department of Water Resource Conservation and Management of Ministry of Water Resource and Meteorology                                   | Bak Bunna     |
| Department of Community Development, Ministry of Rural Development of Environment  | Hun Monin     |
| Freeland consultant: translator/interpreter  | Sok Leang     |
| Kampot Provincial Administration   | H.E. Ney Kong |
| Department of Interdisciplinary, Kampot Provincial Administration  | Koem Nhak     |
| Kampot Provincial Department of Environment  | Eng Polo      |
| Anlung Pring Protected Area, Kampong Trach, Kampot   | Chhim Meng    |
| Kampot City hall   | Y Nheanviseth |
| Kampot City hall   | Ith Sorn      |
| Kampot Provincial Department of Agriculture, Forestry and Fisheries  | Som Sovanna   |
| Department of Interdisciplinary, Takeo Provincial Administration   | Ouk Ry        |
| Takeo Provincial Department of Environment   | Hong Phearak  |
| Takeo Provincial Department of Agriculture, Forestry and Fisheries   | Neung Sothy   |
| Royal University of Phnom Penh   | Yim Mongtoeun |
| Cambodia Institute for Research and Rural Development (CIRD)   | Nget Vibol    |
| Wildlife Conservation Society (WCS)  | Sum, Phearun  |
| BirdLife International   | Ding Li Yong  |
| BirdLife International   | Shelby Wee    |
| NatureLife Cambodia  | Ly Samphors   |
| Cambodian Rural Development Team (CRDT)  | Or Channy     |
| Cambodian Rural Development Team (CRDT)  | Sat Virak     |
| Wildfowl & Wetlands Trust (WWT)  | Yorth Bunny   |
| Wildfowl & Wetlands Trust (WWT)  | Tomos Avent   |



|   |                     |
|---|---------------------|
| Wildfowl & Wetlands Trust (WWT)                           | Yoeung Visal        |
| Wildfowl & Wetlands Trust (WWT)                           | Ke Vuththeng        |
| Wildfowl & Wetlands Trust (WWT)                           | Ouk Bona            |
| Wildfowl & Wetlands Trust (WWT)                           | Net Norint          |
| Wildfowl & Wetlands Trust (WWT)                           | Srun Bunthary       |
| Tram Chim National Park                                   | Nguyen Van Lam      |
| Dong Thap Department of Foreign Affairs                   | Nguyen Huu Xuan     |
| Dong Thap Department of Agriculture and Rural Development | Vo Thanh Ngoan      |
| Dong Thap Department of Natural Resources and Environment | Huynh Van<br>Nguyen |
| Dong Thap Department of Foreign Affairs                   | Nguyen Van Le       |
| Dong Thap Department of Foreign Affairs                   | Huynh Hoang<br>Minh |
| Can Tho University  | Le Anh Tuan         |
| Mekong Delta Conservancy Foundation                       | Duong Van Ni        |
| An Giang Provincial People's Committee                    | Nguyen Duc Huy      |
| An Giang Provincial People's Committee                    | Ton That Thinh      |
| An Giang Provincial People's Committee                    | Thai My Anh         |
| An Giang University- Vice headmaster                      | Ho Thanh Binh       |
| Freeland consultant: translator/interpreter               | Trinh Thi Cuc Tien  |
| Independent Ecologist                                     | Le Phat Quoi        |
| MARD - International Cooperation Department               | Vuong Viet Hung     |
| MONRE - Office of Legal Affairs                           | Vu Thi Hue          |
| IUCN  | Andrew Wyatt        |
| IUCN  | Tang Phuong<br>Gian |
| IUCN  | Jake Brunner        |
| IUCN  | Nguyen Duc Tuan     |
| IUCN  | Vanny Lou           |
| IUCN  | Sorn Pheakdey       |