Sustainable wetland agriculture and water management in the Mekong Region

Wetland agriculture and general issues

Wetlands are vital to the environment and society. Providing a range of ecosystem services, wetlands support water, food and ecological security, biodiversity, and serve as a source of farmers’ and fishers’ diversified livelihoods. However, wetlands are under immense pressure. The SDG6 2018 Monitoring Report highlighted issues of wetland degradation and destruction. The report stated that 70 percent of global natural wetlands had been lost in the last century, with profound impacts on economic development and social and environmental stability (United Nations, 2018). A 2008 FAO publication on agriculture-wetland interactions collected 90 global cases that cited agriculture (notably, unsustainable water management) as one of the main anthropogenic pressures on wetlands (FAO, 2008).

Wetlands and agriculture could be harmonized. In fact, paddy rice fields and aquaculture ponds qualify as wetlands, which by definition can be natural or artificial, according to the Ramsar Convention on Wetlands. While paddy rice and aquaculture ponds are mainstays of agricultural production, they can also perform ecological functions similar to natural wetlands, such as providing aquatic refuges and habitats for waterbird wintering. Likewise, wetlands can provide solutions for agriculture, such as drainage treatment.

Strengthening sustainable wetland agriculture and water management can address both farmers’ livelihoods and ecosystem health to support the Zero Hunger campaign and the transformation towards sustainable agriculture and food production.

Specific areas identified for the Mekong Region on wetland agriculture and water management

The Mekong River Basin supports rapid economic growth among one of the largest human populations in the world. The area is also a critical region for food security, poverty alleviation, and the environment. Most of the 60 million people that live in the Lower Mekong Basin (LMB) reside in rural areas. Their livelihoods depend on wetland products, such as rice, aquaculture
and fisheries. Globally, 90 percent of paddy rice is produced in Asia. The Greater Mekong Sub-region (GMS) provides more than 44 percent of the world’s rice.

FAO, under its initiative on eco-friendly water management for sustainable wetland agriculture, prepared a study report (2020) on Wetland Agriculture and Water Management in the Mekong Region. An overview of the situation, the study was based on country consultations in Thailand, Cambodia, Lao PDR, and Viet Nam. The report identified major issues, such as water quality affected by unsustainable agricultural practices, conflicts on wetlands and related resources utilization. The Trang Agricultural Research and Development Center (Thailand) and the International Union for Conservation of Nature (IUCN) emphasized adopting flood-adaptive agriculture in the region’s flood-prone areas. Regarding the policy and legal framework, no single policy exists that encompasses the management of wetland agriculture. The legal framework governing wetlands management is founded upon various pieces of legislation. This fragmented approach reflects the complex institutional framework and does not provide a clear legal basis for the holistic and integrated management of wetlands and wetlands-related agriculture. This results in overlapping responsibilities and poor communication and coordination among government agencies. Three main issues based on the study’s findings are presented below.

The first issue is water quality. The Mekong River Commission (MRC) – State of the Basin Report 2018 (MRC, 2019) said that “due to the rising fertilizer and pesticide use, continued monitoring of water quality is recommended.” According to the consultations with the Mekong Countries, they need guidance on farm inputs. The study for the initiative on eco-friendly water management for sustainable wetland agriculture identified existing unsustainable agriculture practices in the region, such as the excessive use of agrochemicals. Some farmers apply more than the required amount of inorganic fertilizers and pesticides to increase productivity due to their lack of awareness about the impacts on environmental and water quality.

The second issue is the interface between farmers’ livelihoods and wetlands conservation. Their disconnection reflects lack of collection and sharing of best practices on sustainable use of wetlands and related resources. Such knowledge and experiences are essential examples for establishing a harmonized scenario for both wetlands and agricultural production. Thale Noi, a lowland lake and wetland in the southern Thai province of Phatthalung, provides an example of such a scenario. The area is biologically diverse, providing multiple habitat types supporting a vast array of flora and fauna, including fish and numerous migratory bird species. This wetland is also underpinning vast expanses of rice paddy fields, wetland buffalo husbandry and freshwater capture fisheries. An important wildlife conservation zone, in 1998, Thale Noi received Thailand’s first Ramsar site recognition (wetland sites designated to be of international importance). Nearby, the Trang Agricultural Research and Development Center has been serving as a farmer learning center. Part of the Department of Agriculture under the Ministry of Agriculture and Cooperatives, the Center has been conducting research, raising awareness, building capacity among farmers, and providing technical extension for eco-friendly agriculture in wetland areas in southern Thailand.

The third issue is flood management. Severe flooding can result in tragic losses, damage to agriculture, and disruption of social and economic activities throughout the basin. Traditionally, floods have been viewed only as disasters and risks. In fact, floods can also be regarded as useful resources. According to the Mekong River Commission report (MRC, 2010), the environmental,
social and economic benefits of flooding in the Lower Mekong Basin are greater than in any other river basin in the world. The annual flood pulse is the driver for many wetland products. A more sustainable approach to flood management would not only reduce the negative impacts on the agricultural sector but will also be beneficial from the utilization perspective.

Related International agendas

There are over 2,000 Ramsar sites around the world. Asia is home to 353 Ramsar sites. The Convention on Wetlands is one of the eight biodiversity-related conventions. It provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention covers all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general, and for the well-being of human communities (UN-CBD, 2017).

The 13th Conference of the Contracting Parties to the Convention on Wetlands in October 2018 approved the adoption of Resolution XIII.19. It requested that the Scientific and Technical Review Panel (STRP) together with the International Organization Partners and in collaboration with Contracting Parties (COP) and FAO review the positive and negative impacts of agricultural practices on wetlands (STRP work plan 2019-2021, task 1.2). The Standing Committee designated the task as ‘high priority’ at its 57th Meeting (24-28 June 2019).

Today more than ever, we are searching for a sustainable future by exploring practices to create a healthy planet. It is a major challenge, but also an opportunity. The UN Decade on Ecosystem Restoration starts in 2021. FAO is a co-lead UN agency. The FAO Council (2-6 December 2019) adopted the FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors. The UN-Convention on Biological Diversity published the Zero Draft of the Post-2020 Global Biodiversity Framework in January 2020. The vision of the Framework is of a world living in harmony with nature where, “by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.”

Healthy ecosystems and biodiversity are fundamental for sustainable agriculture and healthy life. Protecting ecosystems and biodiversity is protecting ourselves. In the wetland context, this specifically addresses water quality, flood utilization, sustainable use of their related resources, and sustainable agriculture practices, etc. Besides long term benefits, wetland products and ecosystem services will help farmers with food and water access, ensuring their livelihoods and incomes in difficult times, such as during the COVID-19 pandemic.

Recommendations

- Raise awareness and build capacity among stakeholders on the sustainable use and conservation of wetlands and their related natural resources, such as water, land, soil and biodiversity.
- Update institutional settings and capacities through training and the breaking of silos between sectors to strengthen the institutional capacity and coordination between the agriculture and environmental sectors.

- Assess the utilization of flood resources. This includes mapping flood risks, opportunities, tendencies, current status, and study the best practices for flood-adaptive agriculture, including water-tolerant crops, integrated crop and aquaculture systems, fisheries and the conservation and sustainable use of riverine areas.

- Pilot projects and demo farms can play a vital role in shifting current agricultural practices towards a sustainable approach. For example, pilot eco-friendly water management practices to introduce and demonstrate innovations in integrated water and fertilizer management for paddy rice production.

- Identify, collect and share best practices on the harmonized scenario for wetlands conservation, agricultural production and farmer livelihoods as they could provide the foundation for knowledge and evidence-based solutions, such as eco-tourism, eco-friendly aquaculture, fisheries and livestock grazing in the wetland context.

- Establish an enabling environment. For example, explore trade-offs at the policy level and market mechanisms as incentives to support local communities and farmers on sustainable livelihoods models.

- Develop a plan for scaling up sustainable wetland agriculture and related water management to replicate the best practices. The plan should include and integrate capacity building, biodiversity mainstreaming and gender issues. Convene stakeholders for joint discussions on the plan and a resource-mobilization strategy.

- Finally, involving partners to seek synergies is paramount. All Mekong country government focal points on wetlands have the responsibility of planning and implementing the conservation and sustainable use of wetlands. They could act as government counterparts in this process. To ensure a cooperative approach in the development and implementation of ‘win-win’ initiatives on sustainable wetland agriculture and water management other key stakeholders, such as academia, the private sector, regional bodies and national NGOs, must also be involved.

References

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