
COLLECTING VILLAGERS PERSPECTIVES IN THE MEKONG DELTA

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The Mekong Delta is a highly productive agricultural area and is vital to global food security, the Vietnamese economy and for sustaining the livelihoods of its 18 million residents. While the production of rice dominates agriculture in the Delta as a whole, some areas within it are well known for unique food products such as the fish coming from the flooded areas, the fruit from the middle alluvial area and the shrimps from the coast. The whole area, however, has changed drastically in the past twenty years. The project called “River food systems from villagers’ perspectives in the Mekong Delta”, implemented by WARECOD, a Vietnamese NGO and its partners, ran between 2015 and 2016. The team gathered local knowledge and conducted scientific research, looking in detail at the impact of the irrigation systems built since 2000 and at the changes they have brought.

Cover Members of a Thai Baan research group were nominated by the local communities on the basis of their expertise in different fields

Right Though successful, the dyke system prevents the deposition of sediments

The Mekong river is the 12th longest river in the world, and it flows nearly 5,000 km through six countries: China, Myanmar, Thailand, Lao PDR, Cambodia, and Vietnam. Its basin ranks second only to the Amazon river in terms of biodiversity. This biodiversity is fundamental to the viability of the natural resource-based rural livelihoods of the 60 million people who live there.

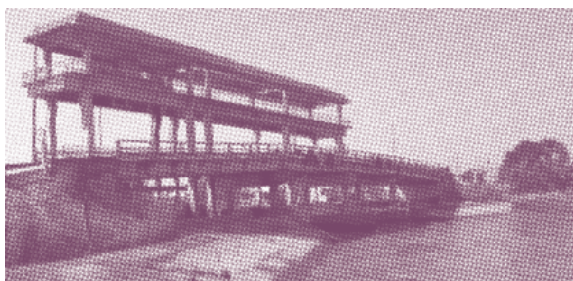
The Mekong Delta includes 12 provinces and the municipal city of Can Tho, and covers an area of 39,000 km². The Delta is home to 18 million people. When it enters Vietnam, the Mekong river divides into two tributaries – the Mekong (or Tien) and the Bassac (or Hau). These two rivers provide the region with abundant water, sediment and aquatic resources through a vast maze of crisscrossing canals and streams that run over low-lying terrain. This characteristic has shaped all economic activities in the Delta, and has

given it its unique culture. The Mekong Delta provides 50% of the country’s paddy rice, as well as 55% of the fish and fruit produced. The amount of rice exported from the Mekong Delta in the last 40 years has helped Vietnam become the world’s top rice exporter.

Drastic changes

In order to promote rice growing for export, a large irrigation network was built in the Delta in the early 2000s. The management of what is known as a “full dyke” network has been successful, and the region sees up to three harvests of rice per year. With an average yield of five tons per hectare, three crops per year brings an additional three million tons of paddy rice, equivalent to 1.5 million tons of white rice.

However, in order to achieve these high yields, the region has paid a high price as this practice has depleted the very natural resources on which it depends. The dyke system prevents the deposition of beneficial sediments, and future sediment loads are now under threat. Growing a third rice crop has caused problems not only in terms of soil fertility, but also in terms of the availability and quality of water. Triple rice cropping has increased the use of pesticides and fertilisers and the water – now trapped in the field all year-round with only one month’s break – has been affected by chemical and organic pollution. This is



because the break times between the crops are too short for fresh straw to decompose.

Water-related conflicts are now common in many communities as there is not enough of it for the third season (and also a result of climate change-induced drought). Soil degradation has also accelerated because nutrients exported from the field through the harvests of rice have not been fully compensated with the use of fertilisers.

Working with the local population

WARECOD is a national organisation that has worked in the Mekong Delta for more than ten years. Its research into water, land and ecosystem issues shows that the only solution to the rapid degradation of paddy lands is to stop farmers growing three crops per year. WARECOD realises that while agriculture has been a driving force in the degradation of the local environment, it can also become the key to recovering these resources.

With these ideas in mind, WARECOD started the “River food systems from villagers’ perspectives in the Mekong Delta” project. Two years were spent talking to farmers and to the local officials about the environmental impact of intensive paddy production. These findings were then disseminated for wider discussion. Partners in this project were the Can Tho University College of Aquaculture and Fisheries, members of different government agencies, and also representatives of other national organisations. All

Thai Baan research

The process known as Thai Baan research has recently emerged as a counter-hegemonic approach to conventional forms of research. Its aim is to gain insights into the local knowledge and the interaction of local communities with their environment. Thai Baan also reflects the local people’s practical understanding of the complexity and dynamics of natural resources, the way these resources are used, and the economic situation of those who depend on them for their livelihoods.

Thai Baan research is more than a conventional participatory research. Villagers are able to choose what they want to study, and the members of the research team are chosen by the communities. Local researchers collect data while carrying out their everyday agricultural, fishing and aquaculture activities, and when they are collecting plants and vegetables. Investigations are not separated from everyday practice.



Left One of the many group discussions organised to ensure an accurate analysis

actors were committed to working with the local population to plan ways for reversing the process of environmental degradation. Scientific research conducted by experts from the Can Tho University was supplemented by four local knowledge research projects carried out at the grassroots level in Can Tho city and in the Bac Lieu province.

The Thai Baan research process conducted by the project involved 15 villagers from each of the four communities in the different ecological areas of the Mekong Delta (see box). Local researchers were nominated by the local communities on the basis of their expertise in different fields. Equal gender representation was ensured from the onset of the project. The formation of women’s groups were facilitated by the existing local Women Unions. These research groups were assisted by WARECOD staff, advisors and volunteers during the whole project. Research was empirical and based on field observations and on the participation of local people. Group discussions were organised to ensure an accurate analysis.

Results

Rice fields are important in the lifecycle of many wild fish and shrimps. They not only provide a habitat for adult fish but also a supportive breeding ground. Most wild fish in the Delta grow and mature in flooded rice fields, and the wild population has also been supplemented by fish that have escaped from aquaculture ponds as river levels rise. The scientific research carried out by the Can Tho University showed that, among other things, there has been a disturbance in fish habitats and breeding cycles, as well as a reduction in fish yields as a result of the irrigation systems.

As the flood season ends, the fish make their way from rice fields into canals and rivers. In the Mekong River Delta, communal fishing rights apply in the flood season to areas that are considered private property in the dry season. This remains the case,

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Right Higher yields have come together with a reduction in the local biodiversity



but as environmental and socio-economic conditions have changed considerably over the past few decades, people – especially the poor who are most dependent on the seasonal wild fish catch – now benefit less from this traditional arrangement.

This is because the irrigation systems prevent fish from moving into and breeding in the rice fields. The channeling of water through these systems has caused a significant reduction in the area of rice fields flooded during the wet season. In addition to the decline in natural fisheries there has been an increase in various socio-economic and environmental problems, including water pollution and water transportation difficulties.

Reports mention that the O Mon-Xa No irrigation system – a freshwater ecosystem – reported an annual decrease of between 9-10% in fishing yields. Research has also shown that since the development of the O Mon-Xa No irrigation system people in the city of Can Tho catch 60% of their fish in rivers. Thus, total fish production has declined by 35%. One of the reasons for the decline in fish populations is the surge in the use

of farming inputs such as fertilisers. Runoff from the fields causes a build-up of agricultural chemicals in water which is trapped in locked canals between the cropping seasons. Residents see this as a clear reason for the decline in aquatic life.

There is also a reduction in the local biodiversity. Research shows that while the diversity of fresh-water fish species outside the irrigation systems was much richer (with 79 fish species), within the area inside the irrigation systems there are only 52 species. This has had a huge impact on the incomes of fishing communities and has indirectly increased the subsistence expenses of all households.

Research reports also show that the most productive fishing season in the study area has become longer. As production dropped, fishermen – especially poor households whose main occupation is fishing – would prolong the fishing period, or buy different fishing gears such as electromagnetic pulse, chemicals and smaller mesh size catching nets, so as to increase fishing quantities. This has increased the pressure on the natural aquatic resources.

More rice, but new problems

The results of the local knowledge research process show that before the year 2000 aquatic species were plentiful in the area. The effects of the dykes that were built, in combination with population growth, the use of electric fishing tools, environmental pollution and climate change, has severely reduced the number of local fish species.

Moreover, according to the local researchers, when farmers started to harvest rice three times per year, the amount of pesticides and fertilisers used for the

“I used to catch about 8kg of fish every day in the past. These fish are exchanged for other things such as sauces, rice and salt. The dyke led to a decrease in fish. It prevents the water natural flow and people use a lot of fertiliser nowadays. As a result, the fishing net was kept in the house rather than being used in the river.”

Nguyen Van Nuong – Thoi Thanh village,
Can Tho, Vietnam

third crop increased almost three times, reaching a total of eight sprayings and 80 kg of fertiliser per hectare. Local people are aware that the triple rice crop has caused many problems. Soil degradation has been accelerated because nutrients exported from the field through rice harvests are not fully compensated for by fertilisers. The solution is a change to sustainable agriculture methods such as taking only a double rice crop, complementing them, for example, with fish or ducks and the cultivation of other cash crops. This would reduce the amount of pesticides, fertilisers and water used, and would result in the reduction of pollutants, the recovery of the affected land and water, and more secure incomes.

WARECOD has been successful in creating a forum for local villagers and local authorities to discuss the pros and cons of the triple crop practice. Becoming aware of the problems, both farmers and the local governments started to raise their concerns, concluding that triple rice cropping inside the “full dyke” rings threatens long-term regional agricultural sustainability. As a result, both the local villagers and local authorities are now busy determining how the local agro-ecosystems can be sustained.

Conclusions

The intensification of agriculture through unsustainable practices is eroding the natural resource base and overstressing the ecosystem services. As in other places in the world, the loss of agricultural biodiversity in the Mekong Delta poses long-term risks. The degradation of soil and water seriously compromises the ecosystem services and reduces the resilience of the local food systems and livelihoods.

This is one of the results of the process started by the “Capitalization of Experiences for Greater Impact in Rural Development” project, implemented by CTA, FAO and IICA and supported by IFAD.
<http://experience-capitalization.cta.int>

It is therefore necessary to conduct research on specific agricultural models, focusing on the sustainable management of water and land resources as a means to establish better ecosystems that can meet the food demands of the population, and ensure the economic sustainability of all communities. It is also necessary to organise dialogues between the local people, the local authorities, scientists and other related stakeholders, seeking the best way to balance the requirements of the ecosystem and the intensification of agriculture.

Scientific research and local knowledge research processes can work together. This combined approach can be useful in getting the perspectives of all stakeholders, and especially in ensuring the involvement of local people in dealing with social and environmental issues. WARECOD has shown that Thai Baan research is meaningful because villagers can take control over the process and “create” their own story on how they perceive and interact with their environment, and show how to coexist harmoniously with it. Thai Baan presents a concrete example of how villagers can use research to negotiate the imbalance in power relationships that exist in the process of knowledge production and development.



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