

2-8. Riverside Agriculture in the Mekong Basin: An Uncertain Future for Environmentally Friendly Agriculture

Riverside Agriculture in the Mekong Region

Due to the impacts of monsoons in the Mekong basin, water levels of both the mainstream and the tributaries change drastically between rainy and dry seasons. During the dry season, farming expands to riverbanks (including sandbars and islets) that are exposed with dropping water levels. Beans, leafy vegetables, watermelon, chilies, various herbs, and many other varieties of vegetables are grown. In Blake (2004), it is reported that in a survey of 10 villages along the Mun and Songkram Rivers in northeast Thailand, a total of 47 kinds of herbs and vegetables were harvested. People cultivate these gardens primarily for their own consumption. Produce is bartered or sold cheaply within the same village, and other harvested produce that exceeds a certain quantity is sold in local markets.

Gardening on riverbanks begins in November when the river water levels drop. People plant crops suitable to the water level. Plants that require longer growth periods are planted in the upper areas of the bank, while morning glory and other water-loving plants with shorter growth periods are planted in lower areas. Around May when the rains begin, harvesting is completed, and the once-riverbank gardens are gradually submerged.



Rainy season.



Dry season.

Benefits of Riverbank Gardens

In the rainy season, soil containing organic materials flows downstream and is deposited on the surface layers of submerged riverbank inclines. In this way, the riverbank soil is renewed during the rainy season. Therefore, even with very little use of fertilizer, a certain quantity of crops can be cultivated, and there is little risk of replant failure. Also, because riverbanks are submerged in the wet season, weeds do not grow, and in the dry season, there is the benefit of having easy access to water. In addition, working in the riverbank gardens is easily combined with other daily tasks like washing clothes, bathing, and fishing. Most of these activities are done by women.

Such riverbank gardens have traditionally been subject to customary rights of usage and inheritance. If a household with usage rights decides not to exercise that right, it can lend the land to another household, and in some cases the right is sold (Blake 2004). In Savannakhet Province of Laos, there are also examples where village officials listen to the wishes of each household each year, and then discussions are held on how to distribute agricultural land.

Not only does riverside farming in the Mekong River Basin require little fertilizer and labor, its effective use of nature's cycles places very little burden on the environment.

Cash Crop Production by Local Communities

In places where wide sandbars emerge, such as in northeastern Thai provinces and in Bokeo Province of northern Laos, not only is subsistence farming done, but cash crops such as corn are also cultivated. Corn grown and harvested in Laos is sold in Thailand, and it is an important source of cash income for communities.

There are also examples where traditional production activities have led to new businesses. In Savannakhet Province of central Laos, due to the merging of multiple rivers on the upper Xe Ban Heing River, changes in water levels in the central basin in Champhone District are especially drastic. In this river, cotton and indigo have traditionally been widely grown in the dry season. Before, people used clothing dyed in this indigo for their work clothes, but with the mass introduction of cheap industrially produced clothing, this custom began to decline. However, natural dyes and cotton that is free of agricultural chemicals are again becoming appreciated in other countries, particularly in Japan, and new products are being developed with training by foreign technicians. Since about 10 years ago, such products have been found in the Lao capital of Vientiane and have also been exported to Japan. Handicraft production is increasing women's income.

Disappearing Riverbank Farms

Riverbank farming places little burden on the environment, requires little investment from communities, and is a valuable source of income, but the area available for farming has declined over the past 20 years in various parts of the Mekong basin. One cause for this decline is dam construction. Dams block the flow of water and create reservoirs. Therefore, even in dry season, water levels do not drop upstream of these dams, making riverbank farming impossible.

There is also a phenomenon called "hungry water," which causes severe erosion of downstream riverbanks. Because currents in reservoirs are very slow, sand that was previously stirred up in the river sinks when going through the reservoir. Thus, water flowing downstream of the dam does not contain much sedimentation. When this "hungry water" flows downstream, it "eats up" sediments in large quantities, causing severe eroding of riverbanks.

Also, because many of the dams constructed in the Mekong basin are hydropower dams, unnatural releases of water from reservoirs also causes much riverbank erosion both upstream and downstream of the dams. For such various reasons, there is a decline in riverbanks available for farming both upstream and downstream of rivers where dams have been constructed. Embankment reinforcement to prevent erosion is also contributing to the loss of agricultural land.

Reevaluating Riverbank Agriculture

In the past, people have not been compensated for loss of riverbank farms due to dam construction. Use of this land was customarily recognized at the village level, but not formally recognized at the national level. Communities, therefore, could not claim formal legal rights to use or own the land, and developers have ignored this issue.



Such work only became widely recognized as a livelihood when its importance was emphasized by affected people who unified in a movement against the Pak Mun Dam (construction of which began in 1991), and when NGOs and communities in Laos and Thailand conducted surveys and reported their findings (e.g., AOP and SEARIN 2002, Shoemaker, Baird, and Monsiri 2001).

The loss of riverbank agriculture was also a topic of controversy prior to the construction of the Nam Theun 2 Dam supported by the World Bank. In the case of the Nam Theun 2 Dam, water is diverted into the Xe Bang Fai River, and riverbank farms along this river are supposed to receive compensation. According to a Mekong Watch survey, however, it has become clear that such compensation has not actually been made (Mekong Watch 2010)¹.

Riverbank farming is also an important factor in the Mekong River basin's dry season landscape. In Laos's Luang Prabang, which is a World Heritage Site, many tourists come from around the world and take photos of the riverbanks in the dry season. Not only is riverbank farming a part of the lives of local communities, it is starting to be valued as a tourist resource.

In the context of development in the Mekong River basin, where hydropower is emphasized, a pressing challenge is to get dam developers to correctly understand the value of riverbank farming, including its economic value and contribution to food security.

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1. See BP 2-5 *Rapidly Advancing Mekong Tributary Development and its Environmental and Social Impacts: The Case of the Nam Theun 2 Hydropower Project in Laos*.