

## Floating Gardening: a local lad becoming a climate celebrity?

Floating gardening in Bangladesh is an example of how a traditional practice can become a development sensation. **Haseeb Md. Irfanullah** asks if this picturesque technique will be compatible with climate change.

In the wetlands of southern Bangladesh (parts of Barisal, Gopalganj and Pirojpur districts), floating gardening is an age-old agricultural practice. Here, in the rainy season, aquatic plants such as water hyacinth are stacked in a compact fashion, making a long, strong floating bed. It is then left for several weeks to allow the upper surface to rot. Once the composting is done, the buoyant platform is used to raise seedlings of various vegetables and other crops. When the water recedes, these seedlings support the early cultivation of winter vegetables to fetch the best price at the beginning of the winter. At the end of the monsoon, the residue of the floating beds is also used as organic fertiliser to cultivate winter crops on the land. It's a simple, traditional technology that uses available natural resources, adjusts to local wet conditions, requires little effort for big returns, and helps the locals to earn a living.

Since the late 1990s, this traditional farming technique is being used more and more. A very well-known agricultural programme on Bangladesh national television played a major role in popularising it nationally. In 2000, IUCN & BCAS (Bangladesh Centre for Advanced Studies) tried to expand floating gardening in the wetlands of south-central Bangladesh, near the area where it is traditionally practiced. The intention was simple – participatory natural resource management to improve poor people's livelihoods. Around the same time, this agro-practice found a new dimension. Under its climate change adaptation initiative (2002-2005), the international NGO CARE promoted this farming technique with the vulnerable people of the south-western region to tackle water-logging. Such an image of floating gardening – community-based adaptation to climate change – was further promoted by BCAS in the years to follow. In 2005, CARE & IUCN introduced floating gardening in the north-eastern wetlands of Bangladesh, locally called haor. Until 2009, they widely promoted this technology in around 100 villages as a means of improving the nutritional status of extreme poor haor-



The wetlands of southern Bangladesh have long been ideal for cultivating floating gardens.

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dwellers, particularly during the difficult monsoon season. These agencies are still promoting floating gardening in several other districts of Bangladesh.

In 2005, Practical Action took this traditional practice to another geographical location – the north (Gaibandha). This area does not have any wetlands per se. But the technology was considered a useful option in the monsoon months for the river-eroded families living on the embankment by the mighty River Jamuna. From 2010–2012 Practical Action promoted the technology in a significant way: the charity trained and supported 700 poor families, thus reaching more than 3,000 people, to practice floating gardening under a UK aid-funded project. During the monsoon months these families, located over four northern districts of Bangladesh, produced more than 131,600 kg of vegetables (worth US\$ 20,500) on about 1,500 floating beds. This amount was sufficient to cover the average household's needs for vegetables during the rainy season. In addition to practicing floating gardening under different initiatives, Practical Action has

also been promoting this technology among local and international NGOs by organising capacity building programmes and providing technical backstopping. Other development agencies are also promoting this technology in the haor region and other parts of Bangladesh as a means of poverty alleviation.

Floating gardening of Bangladesh has received some international attention as well. It has been discussed significantly on the web, and has appeared in policy documents and in reviews on adaptation. Many peer-reviewed research papers have also recognised floating gardening as a feasible adaptation measure.

National documents also could not ignore this farming technique. For example, the National Adaptation Programme of Action (NAPA, 2005) of Bangladesh identified promotion of floating gardening as one of its 15 adaptation projects. The revised NAPA (2009) also recognised the potential of this traditional practice. But it was only in early 2013 that the Government of Bangladesh approved a US\$ 1.6 million project under its Bangladesh Climate Change Trust Fund

(BCCTF) to promote floating gardening for climate change adaptation. This 3-year project will be implemented by the Government's agricultural extension wing in 40 sub-districts of 8 districts all over the country.

From this chronicle of the last 12 years, we can note three major things. Firstly, a "traditional" agro-system (floating gardening) has spread to many parts of the country as a local "innovation". To accommodate the needs and opportunities of the new areas, this practice has taken different forms, shapes and sizes. Secondly, several local and international NGOs led this rather rapid spread, at more or less the same time, but without substantial involvement from the relevant government wings. Thirdly, the purpose of introduction to new locations was either food and nutritional security, community-based adaptation, disaster management or alternative income generation, and only targeted the poor or the poorest. This intention is totally different from organised agro-business (mainly through seedling-raising), which is the sole purpose in southern Bangladesh. Moreover, according to available information, none of the development agencies have managed to develop entrepreneurs of floating gardening as seen in the south.

Not many traditional practices of Bangladesh have received the amount of attention that has been paid to floating gardening. It seems, however, that development agencies are too mesmerised by the sheer simplicity and buoyancy of this agro-technique. As a result, obvious limitations to this technology thriving sustainably in a new location are often not carefully examined and followed-up on. Year-round availability of stagnant water, a sufficient amount of mature water hyacinth and a market opportunity for the produce are three basic pre-requisites to sustain floating gardening in an area. But development agencies often overlook these facts and focus on direct, seasonal benefits, like household nutrition in the monsoon. Further, an innovation needs long-term follow-up to ensure local people can sustain it, but many development projects cannot commit to such lengthy engagement with their communities. As a result, low retention of floating gardening has been seen in many areas after withdrawal of the project support. Since floating gardening is very much weather dependent, floods or long rainless spells can directly affect floating



Floating gardens are now widely promoted as a solution to poverty.

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gardening in northern and north-eastern Bangladesh. I can personally remember poor families in the haor repeatedly building their floating beds during the floods of 2007, and how all of their hard work was undermined.

Regarding community-based adaptation to climate change, the importance of floating gardening has often been over-emphasised. Given the outlook of potential climate change, floating gardening could indeed be a suitable and successful coping option. Rarely discussed, however, are the effects climatic variability could have on floating gardening. How will bodies of water act under fluctuating rainfall? What will be the annual regeneration of water hyacinth under varied temperature and hydrology? Is the drainage system of a floating bed good enough to handle sudden heavy rainfall? How will salinity intrusion affect this practice in the south?

Floating gardening in Bangladesh is a case of "mass fascination" overpowering the reality. That is why, despite so much interest from different areas, there is hardly any research on the links between floating gardening and climate change. The power of vulnerable communities and their traditional knowledge and practices have repeatedly been highlighted in the discussions on community-based adaptation. But the strengths and limitations of floating gardening under local climate change, climate variability and disaster risk reduction contexts should be understood through proper study. Without such analysis we might be promoting an inappropriate adaptation option – and

pushing floating gardening to do what it was never designed to do. [GS](#)

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#### Further reading:

- Irfanullah, H.Md. 2009. *Floating gardening in Bangladesh: Already affected by climate variability?* In: IUCN, UNEP, UNU. Biodiversity Conservation and Response to Climate Variability at Community Level, Dhaka, Bangladesh, 7-14 pp.
- Irfanullah, H.Md., Adrika, A., Ghani, A., Khan, Z.A. and Rashid, Md.A. 2008. *Introduction of floating gardening in the north-eastern wetlands of Bangladesh for nutritional security and sustainable livelihood.* Renewable Agriculture and Food Systems 23(2), 89-96.
- Irfanullah, H.Md., Azad, Md.A.K., Khan, A.K.M. Kamruzzaman and Wahed, Md.A. 2011. *Floating gardening in Bangladesh: a means to rebuild lives after devastating floods.* Indian Journal of Traditional Knowledge 10(1): 31-38.
- IUCN Bangladesh, 2005. *Baira: the Floating Gardens for Sustainable Livelihood.* IUCN Bangladesh Country Office, Dhaka, viii+61 pp.
- Practical Action, 2011. *Floating Gardens in Bangladesh. Technical Brief.* <http://practicalaction.org/floating-gardens-in-bangladesh-1>