

## SANDBAR CROPPING AGRO-ECOLOGICAL TECHNIQUES IN THE NORTHERN DISTRICTS OF BANGLADESH

In the northern Districts of Bangladesh, the [Sandbar Cropping techniques adopted by the local communities with the support of Practical Action](#) International NGO from United Kingdom, have shown their great effectiveness in making productive the uncultivable sand-covered silty riverbeds. *Sandbar Cropping* is a simple and innovative technology that uses pit cultivation approach to produce crops.

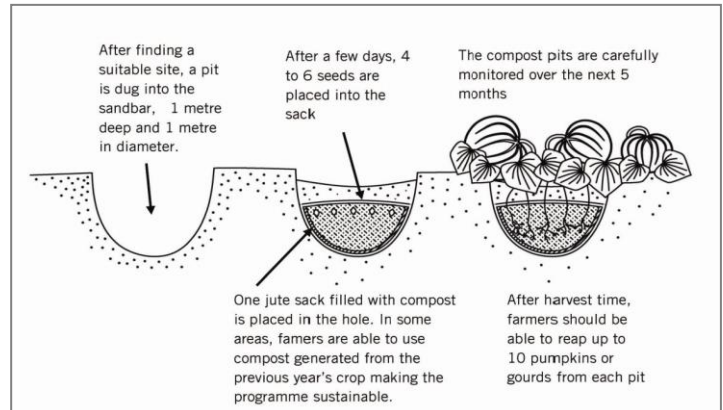
In November 2018, the [International Innovation Award for Sustainable Food and Agriculture](#) organized by FAO and the Government of Switzerland, has recognized Practical Action for the sustainable and innovative *Sandbar Cropping* methodologies adopted in Bangladesh.

In Bangladesh, during the annual monsoon the main rivers and their hundreds of branches carry enormous amounts of water and silt and flood at least a quarter of the country. In winter, as the water reduces in the main river channels, thousands of hectares of sandbars (sand-covered silty riverbeds) surface. Every year millions of people are affected by sudden shifts in river courses that destroy their crops, farms and homesteads. The sandbars that emerge each year as the rivers recede are not stable enough to support natural vegetative growth and remain as barren sand until the rivers rise again.

These sandbars, however, can be made productive by growing pumpkins and other crops using the pit cultivation techniques, by digging small pits and lining these pits with compost.

In 2005 the *Sandbar Cropping* low-cost technique has been developed by Practical Action through a series of action-research activities in two northern Districts of the country, Gaibandha and Rangpur, involving 177 low-income local farmers. This sustainable agro-ecological system quickly showed its effectiveness reaching over 20,000 households, who have used more than 4,000 hectares to grow over 100,000 tonnes of pumpkin valued at GBP 15 million. The fruits produced have been put on the market in over twenty Districts of Bangladesh and have been exported too. In 2007 the project won the *Asia-pacific (APFED) Gold Award*.

The [brochure published by Practical Action](#) summarizes the main features of the *Sandbar Cropping* technology adopted in Bangladesh. "The season for pumpkin cultivation normally starts in October-November. After finding a suitable site, a pit is dug into the sandbar, approximately 1 metre deep and 1 metre in diameter. Pits are usually



dug around two meters from each other. Pits are lined with compost which is a mixture of cow dung, soil and water. Jute sacks can be used in extreme geo locations where the ground is very poor. After a few days, seeds are placed into the pit. The compost pits are carefully monitored over the next five months while periodical nursing and irrigation are required.

Large scale irrigation is not always necessary as the sandbars are usually close to the river and watering can be done by hand. In the initial stages, surface water is used for irrigation where a source is available. e.g. water channels create as the river recedes. These water channels disappear in the dry season. Ground water can be used for irrigation when the surface water dries out. Pumpkin fields can be irrigated using a pump and borehole. A low-cost reservoir made with polyethylene sheet can be used for optimize water use. Water is pumped from the borehole to the reservoir through polyethylene pipe/hosepipe and farmers then use buckets to take water from the reservoir to water the individual pits. The quantity and frequency of irrigation depends on the type of soil and season (end stage of the production benefitted from rain water).”

After a few weeks’ nurturing, green plants come out of these pits and spread over the sand. Over the next few months, flowers bloom, fertilized ones turn into green fruits, which ripen into orange pumpkins.

The Practical Action website also describes the other essential aspects that have made this technology effective and sustainable for the local communities: access to sandbars by landless families; availability of seeds, compost, fertilizers, micronutrients and irrigation; access to microfinance and storage facilities to allow the sale of products at the best prices; capacity development of farmers on the technology, organization into formal producers’ associations, organization of value chains and access to the market systems in the region, at national level and beyond.

Thanks to the effectiveness demonstrated by the *Sandbar Cropping* technology and the support of local governments and institutions in charge of agricultural development, the approach has been widely replicated in Bangladesh, also diversifying crops and involving other local, national and international institutions and organizations.

An article published in January 2021 by the [dhakatribune magazine](#) informs that farmers in the Gaibandha District managed to stock 50% of the harvested pumpkins in 2020 to sell them during the off-season between October and December to earn windfall profit. According to the District office of the Department of Agriculture Extension, a total of 4,500 hectares of sandy land in char villages of the district were brought under pumpkin cultivation in 2020, and at least 5,400 farmers were engaged in farming the vegetable. Bumper yield of pumpkin and its high profit encouraged many others to follow them.

The *Sandbar Cropping* technology adopted in Bangladesh has been widely documented. The information and methodological materials published by various institutions and organizations allow all interested actors to adapt the approach to other dry areas and contexts facing similar environmental, economic and social challenges, exacerbated by ongoing climate change impacts.





## To know more

[Sandbar Cropping in Practical Action website](#)

[Sandbar Cropping brochure in Practical Action website](#)

[2018 FAO International Innovation Award for Sustainable Food and Agriculture](#)

[Article in dhakatribune.com](#)

[Article in ecosecretz.com](#)

[Sandbar Cropping in permaculturenews.org](#)

[Document in techmonitor.net](#)

[Article in globallandscapesforum.org](#)

[Sandbar Cropping – slideshare.net](#)

[Article in firtspost.com](#)

[Article in securingwaterforfood.org](#)

[Sandbar Cropping in researchgate.net](#)

[Article in peoplefoodandnature.org](#)

[Article in yaleglobalhealthreview.com](#)

[Article in aidforum.org](#)

[Article in longdom.org](#)

[Adaptation technology in Bangladesh – Publication](#)

[Practical Action website](#)

