

# 1. A timeframe for agricultural recovery

There are activities that need immediate action, others that will take 1-2 years, and others that will need managing in the long term. This recovery timeframe for agricultural production is based on the experiences in Aceh. Details of the tasks related to agriculture can be found in the relevant chapters of the guide.

## Immediate activities

### **Clean up**

Remove debris and sediments that cannot be incorporated into soil.

Wherever possible separate organic waste for composting to provide valuable organic matter and fertiliser for agricultural soils.

### **Survey land levels**

Where there is an earthquake before the tsunami, land levels may be altered, so surveys will be needed to establish levels and direct rehabilitation of drainage lines and irrigation channels. Some coastal areas may no longer be suitable for agriculture due to subsidence and high frequency of tidal inundation.

### **Repair infrastructure**

Assessment and repair of irrigation and drainage infrastructure is a priority for successful agricultural recovery. In Aceh, agricultural production was limited long after the tsunami due primarily to inadequate drainage and irrigation. The recovery effort had an emphasis on rebuilding infrastructure like roads and housing, often overlooking the importance of a functioning irrigation and drainage system.

## **Train agricultural staff and farmers**

An immediate need is to have the capability to assess soil salinity. The degree of salinity from tsunamis or seawater inundation will depend on the soil conditions at the site and the length of inundation. Rapid assessment techniques for salinity are discussed in Chapter 3. Farmers should be involved wherever possible to improve their understanding of the changes to soil conditions in their area.

## **Assess soils**

Agricultural soils need to be tested for salinity, nutrients and physical condition to ensure that farmers avoid sowing crops in unproductive soils. Rapid assessment techniques for assessing soil salinity, water salinity and soil nutrient status are described in this handbook.

# Short term activities

## **Coordinate with the farming community**

Conduct participatory surveys with the rural community to understand the immediate and longer term needs of farmers and their families. This will help avoid misdirected and wasted aid efforts.

## **Coordinate advice**

It is vital to coordinate the activities of government agencies and NGOs in a tsunami-affected area. Coordination and communication with all groups means consistent advice is provided to farmers on management of sediment and soils, and when their land is suitable for farming. Aid organisations need to work closely with local agricultural extension staff and groups of farmers in any land rehabilitation effort.

## **Establish income producing opportunities for the farming community**

In the short term it may not be possible to generate income from farming activities, so it is important to employ farmers and their families to assess and repair drainage and irrigation infrastructure, assess soil salinity and nutrients, and compost organic waste. These activities will provide income and help return their farming land to production. They will also promote independence from food aid. Micro finance to help groups of farmers may be appropriate.

## **Provide high quality planting material**

Supplies of seed and planting material may be scarce. It is vital that only certified quality seed is supplied to farmers to ensure that the first post-tsunami crops do not fail. These materials are as important as the provision of implements for farming. Aid groups need to test the quality of seed and other materials that they provide to farmers.

### **Avoid farming saline land**

Most crops struggle to be productive in saline soils. Successful crops are an important part of the recovery process after a tsunami. Early salinity surveys will identify areas unsuitable for farming. Periodic monitoring ensures that farmers do not commence cropping before salinity levels have dropped to acceptable levels.

### **Grow salt tolerant crops where necessary**

Varieties of rice and other crops that can be grown in saline soils need to be identified and recommended to farmers while there is still a possibility of salt in the soil. The crops need to be matched to the soil salinity levels. The International Rice Research Institute can recommend suitable rice varieties. Many salt tolerant tree crops are recommended for revegetation of coastal areas and re-establishment of tree crops.

### **Train agricultural staff and farmers**

Government and NGO staff and farmers may have limited experience with the post-tsunami soil and crop conditions so training may be needed in assessing soil salinity and nutrients, making compost etc.

### **Establish and support women's farming groups**

After the Aceh tsunami there was great social trauma and isolation, and until farming soils were restored, many women had nothing to do outside their homes. Women's farming groups provide important social outlets, extra income for the family, and farming knowledge. In many cultures women are the principal farmers.

## **Long term activities**

### **Transfer technology and knowledge to the farming community**

As information on farming on tsunami-affected soils becomes available, it needs to be passed on to the farming community as quickly as possible to ensure they receive up to date information. Farm demonstrations and field days show farmers what methods work best.

### **Continue to build the capacity of farmers, extension staff and NGOs to manage agricultural soils**

The Aceh experience showed that important relationships and networks were established through training and extension activities after the tsunami, and these networks need to be strengthened over time to build farming knowledge and expertise. The networks need to maintain contact between farmers, agronomists and NGOs. Training can focus on the agronomic and ecological aspects of farming on existing as well as new agricultural areas and the importance of protecting natural ecosystems like peat land, wetlands and forest. Demonstration sites are important for bringing groups together for updates on farming practices, rehabilitation efforts and possible collaboration.

## **Expand support programs to non-affected areas**

Areas unaffected by the tsunami may miss out on the support and training provided to farmers in tsunami-affected areas. In Aceh, for instance, the unaffected inland areas have higher levels of poverty than the coastal areas, and even greater need for information and training.

## **References**

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