

9. Capacity building

Capacity building of extension staff, NGO workers and farmer groups was a crucial component of the ACIAR projects in Aceh. Technical knowledge gained by Aceh extension staff enabled them to diagnose constraints to the re-establishment of crop production and associated income generation after the tsunami, and improved the advice and information available to farmers.

One of the biggest challenges in restoring agriculture in Aceh was encouraging farmers to be independent, rather than dependent on external aid. This means it is very important to focus on capacity building for long term improvement. In Aceh only a third of farmers could afford to plant rice three times a year after the tsunami, the rest planting only once a year due to poor infrastructure and lack of capital. For the same reasons, some farmers consumed the profit from aid-assisted crops that was intended to support them for the next planting season. Farm production suffered due to lack of capital as farmers spent it on other things needed to re-establish after the tsunami. Aid-assisted farmer training in production management, compost making, crop rotations, soil management and stubble management could be useful in these cases.

Involving farmers in field trials and monitoring activities was vital to the success of the projects. The projects' emphasis on communication and information sharing through meetings, interactive workshops, newsletters and publications enabled rapid exchange of information and practices to recover from the tsunami and improve productivity. Productive crops motivated others to return to farming. Farmer-to-farmer learning visits enabled farmers to learn techniques of crop production in other areas and apply new ideas to their own farming system.



Figure 17: Training allows extension staff and farmers to understand changes to soils and crops

Training topics

After the Aceh tsunami, farmers needed good agronomic support given the soil and drainage disturbances, nutrient changes, shattered communities, loss of labour and need for leadership. It would be useful to have local agriculture staff in tsunami-prone regions regularly trained in post tsunami crop management to quickly re-establish agriculture and farmers' confidence.

The training could include the following topics:

- soil salinity, including operation of EC meters, and EM38 equipment
- soil acidity, including operation of pH meters and pH kits
- soil sodicity, including soil dispersion test
- soil texture, including ribbon test
- soil structure – visual assessment
- soil organisms – visual assessment
- importance of organic matter
- soil sampling protocols for laboratory analysis
- monitoring and recording test results
- typical crop responses to salinity, nutrient deficiencies, waterlogging
- assessment of sites and crops for salinity and nutrient impacts, especially visual indicators
- remediation methods to improve crop production
- demonstration trials to compare varieties and nutrient amendments.

Farm demonstrations

Demonstration trials comparing existing and improved farmer practices and scientifically tested practices provide some of the most useful training for farmers, especially when introducing new practices or amendments. Demonstration trials involve farmers and give them evidence of change, but are not scientifically valid. Scientifically designed field trials are set up with a number of replicates to determine statistical differences between treatments, and require the input of trained researchers, so are only possible if resources are available to employ researchers.

Specific information and advice about research and demonstration trials in Aceh can be found at: <http://www.dpi.nsw.gov.au/research/projects/06P302>.

Participation

When undertaking any training ensure there is plenty of time for discussion and interaction and sharing of stories. When introducing new practices or technology provide practical demonstrations and make sure trainees have hands on experience of the technique until they are confident.



Figure 18: Experimental trials (peanuts and vegetables top, rice above) help to determine the causes of crop problems. Farmer demonstration sites can then be created to show farmers and the community production methods that have been successful in tsunami-affected soils.