

Project Aims

A tsunami hit the region of Aceh on December 26th, 2004, and inundated more than 150.000 ha of arable land with seawater, and spread waste and sludge over fields. At the same time, the agricultural faculty of the Syiah Kuala University (UNSYIAH) in Banda Aceh was severely damaged and lost approximately 80% of its research and teaching staff. The ACULTURE project is a collaborative action between three European and two Indonesian universities. It aims on assisting Syiah Kuala University in the (re-) establishment of human resources, curricula, systems and institutions relevant to the prevailing agricultural problems post tsunami. This includes the shared education of six Indonesian graduate students, the development of curricula and the organisation of three international workshops. The project will also help to (re-)establish sustainable agricultural and horticultural production systems in this region.

Project Activities

1) In February 2007 the 2nd workshop was held at the Syiah Kuala University in Banda Aceh (Nanggroe Aceh Darussalam) dealing with “*Soil chemical properties in Aceh, methods of phytoremediation, and food quality*”. About 60 students and staff of the Syiah Kuala University, representatives of national organizations, and European project partners attended the workshop. Topics presented and discussed included current status and application of phytoremediation strategies, mycorrhizal

technologies for contaminated soils, status of soil desalination two years after the tsunami, introduction to the organic cacao programme in the North Aceh district and an overview on chemical and biological challenges for soil fertility management in the humid tropics.



Some participants of the 2nd workshop in Banda Aceh in February 2007

2) Six Indonesian PhD students investigate different aspects of soils contaminated with heavy metal or crude oil, agricultural intercropping systems, beneficial microorganisms for nutrient uptake and biological control of soil born pathogens at the European partner universities. They presented their topics, first results and further working plans to the workshop audience.

3) The development of four lectures with accompanying practical courses was initiated by the project partners in November 2006. Valuable comments on content and implementation given by

students and staff during the 2nd workshop will be considered in the final lecture preparation. These lectures, covering different aspects of agricultural ecosystems, will be taught at the partner universities:

Lecture I: *Chemistry and biology of the rhizosphere*

Lecture II: *Cycling of nutrients and toxic elements in agricultural ecosystems*

Lecture III: *Organic farming*

Lecture IV: *Fertilization management*



Project partners at the workshop in Großbeeren in November 2006

4) Two model farms were established on tsunami affected areas close to the Syiah Kuala University (1. Blang Krueng, Baitussalam; 2. Miruek Taman, Darussalam). Plots of 7 x 2 m size were prepared and a range of crops was grown in the first year:

- onion • cucumber • peanut • corn
- tomato • sweet potato • turmeric
- corn + peanut • tomato + onion

Each crop was treated with different types and rates of fertilizers:

- no fertilization • inorganic NPK
- $(\text{NH}_4)_2 \text{SO}_4$ • cow manure 10t ha^{-1}
- cow manure 20t ha^{-1}
- cow manure 30t ha^{-1}
- NPK + cow manure 20t ha^{-1}
- NPK + cow manure 30t ha^{-1}

The determination of the yield of each crop - fertilizer combination at harvest allows recommendations to other local farmers. The model farm is well accepted in the local community and farmers come to learn from the trials. Participants of the 2nd workshop visited the model farms and discussed details of farm management, practices and results of the first year with scientists and local farmers in the field.



From top-left to bottom-right:

- team of local farmers and scientists managing the farm
- cucumber growing at the model farm
- participants of the 2nd workshop visiting the model farm at Miruek Taman
- discussion between scientists and local farmers about the status of crop cultivation two years after the tsunami

Project Partners

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 Group members: Andrea George, Henrike Perner, Elke Neumann, Silke Ruppel, Syakur, Wahyu Harso



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ACULTURE

The Re-establishment of Human Resources, Curricula, Systems and Institutions at the Agricultural Faculty of the Syiah Kuala University in Aceh



Activities at a model farm two years after a tsunami has hit the coast of Banda Aceh (Nanggroe Aceh Darussalam, Indonesia).