

Resilience, Rights and Resources: Two years of recovery In coastal zone Aceh



Supporting tree crops development on the East coast of Nanggroe Aceh Darussalam (NAD)

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Background

Crops such as cocoa, potatoes, soybean, dairy and coffee are economically important commodities in the tsunami-affected districts in Aceh. Targeting the major crops, CIRAD and local partners organised a training on “Local Economic Resources Development” (LERD) funded through the French public funds. During the training, potential of different products and commodities in the region as need for action to improve quality and productivity of these priority commodities for promoting at national or international markets. The participants came from the representatives of farmers, traders and technical ministries.

During the training cacao was identified as the most potential for improving farmer income. Aceh Development Agency in consultation with the National Development Planning Agency (Bappenas), Regional Development Planning Agency (Bappeda), and Syiah Kuala University (Banda Aceh) has selected Pidie District, in East coast of Aceh, for developing sustainable cocoa production in Aceh.

A preliminary study carried out by *Bappeda of the province of Nanggroe Aceh Darussalam (NAD)* indicated cocoa and coffee as two high priority crops after coconut in Pidie District (Table 1).

Table 1. Principal perennial crops in Pidie District

Commodity	Area (ha)	Production (tons)	Number of farmers
Local Coconut	11 531	7 862	24 263
Hybrid Coconut	210	104	674
Cocoa	8 906	3 643	13 223
Coffee	9 254	3 267	12 325
Betel	3 674	1 446	5 589
Sago palm	2 012	527	4 598

Cocoa farming started in Pidie in 1980 with local communities planting cocoa trees with government assistance. By 2004, cocoa covered 8906 hectares or 23% of total area cultivated areas in the district. Of total district production, 90% comes from smallholder farmers. Area under cocoa has gradually increased over the years. Although grown in all sub-districts, it is now mainly found in Bandar Baru, Geumpang, Trienggadeng, Titeu/Keumela, TangseTangs and Gelumpang Tiga. Most cocoa areas are still in their early immature stage.

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Overview of the effect of tsunami and political conflict

Compared to the western coast of Aceh, its eastern coast was less damaged by the Tsunami of 26th December 2004. The physical damage in Pidie was limited to 0.5 km from the coast. However, the destruction was high - 2893 people killed and 537 people disappeared and 5180 houses and 21 offices heavily damaged.

The post-tsunami recovery and development in NAD province in general has been very slow mainly due to political conflict. Following the peace agreement between Indonesian Government and Aceh Independence Movement (or GAM), local communities are trying to back into agriculture, rebuild damaged infrastructure and reclaim abandoned plantations. Support is coming from the Indonesian government, donor countries and many NGOs.

The activities

Considering the importance of cocoa for farmers' livelihood and local economy in Pidie, the French Embassy in Jakarta provided initial funding for a survey to assess the agro-ecological condition in Pidie for cocoa and to identify extant technical, socio-economic and marketing problems.

Cocoa area in Pidie District extends from low altitude (close to sea) to high land near the mountains. There are six cocoa-producing sub-districts each at both high and low altitudes in Pidie. The survey was conducted at both high and low altitudes (Table 2).

Table 2. Surveyed Villages and sub-Districts

Area	Village	Sub-district	Distance from district capital (km)
Low Land	Cot Baruh	Gelumpang Tiga	19
	Kayee Jato	Bandar Baru	26
	Tuha	Tringgadeng	40
High Land	Ulee Gunong	Tangse	64
	Mane	Mane	92

Data and other information were collected through combination of PRA (Participatory Rural Appraisal), interviews, and direct field observation on existing problems in cocoa cultivation, cocoa farming calendar, marketing, wealth ranking of cocoa farmers, gender roles, mapping natural resources in villages, household income and role of supporting institutions.

Agro-ecological conditions and farming practices

1. Although land suitability for cocoa in Pidie varies between suitable (S1) to marginally suitable (S3), the overall growth of cocoa and the availability of good quality planting material are reasonably good. With improvement in current practices, it is estimated that the current dry bean production of 0.8 tonnes/ha/year can be increased up to 1.5 tonnes/ha/year.
2. Important constraints in cocoa production in Pidie include low level management, mainly due to farmers' fear of going or staying long in the field (political and social conflicts).
3. The low management leads to cocoa canopy going too high, dense and diseased, low flowering and fruiting. The crowns of the shade tree *Gliricidia sepium* grow too dense and affect cocoa. These shade trees are used as nest by rats and squirrel.
4. Cocoa Pod Borer (CPB), starting in 2002, is becoming a serious problem. This is likely to remain serious, if not increase, in future rehabilitation programs.
5. Rats, squirrels and wild pigs are serious pests.
6. Pod rot *Phytophthora palmivora* infestation is a serious problem.
7. Lack of technical information among cocoa farmers
8. Low quality of cocoa beans; as immature pods are harvested early to fulfill household's cash need and to avoid rat and squirrel damage.
9. Small size of cocoa fields - often less than 0.5 ha/household. For a reasonable income, 2 ha/household is needed. Farmers also express their wish to extend their cocoa plantation up to 3 ha.

Major problems associated with cocoa farming were identified during Farmer Group Discussions (FGD) in the villages. While some problems are specific to certain villages, the problems of **pests and diseases** and farmers' lack of capital were consistent across all surveyed villages, irrespective of altitude difference. Low farm maintenance and lack of input in cocoa fields were key problems in village with large rice area as in the villages of Tuha and Mane.

Besides of on-farm constraints, the poor post-harvest processing and inefficient marketing of cocoa are also important issues in Pidie. Generally, there is no process for fermentation and insufficient drying of beans at farm level. There are too many steps of sun-drying leading to the poor quality of cocoa beans. At the trader level as well, there are poor bean drying and grading facilities. Hence the cocoa beans are insufficiently dried and often moldy. Lack of financial support for farmers and traders alike, lack of technical knowledge and lack of quality control are other remaining constraints.



Figure 1. Participatory Rural Appraisal (PRA) took place at a farmer' cacao farm (left). Sun drying of cocoa beans, traditionally practiced by farmers, without fermentation (right)



Figure 2. Cacao Pod Borer (CPB) the most important pest for cocoa. Green pods attacked by CPB (left) and demonstration on how to control CPB through sieving method (right).

KEY MESSAGE

Considering the potential for improving cocoa production and export in Pidie as well as other districts in NAD, a **pilot project** needs to be development and implemented. This has the potential to improve farmer income as well as local economy.

- Implementation of recommended agriculture practices for **rehabilitation** and for supporting the **new area development** through improved planting material of cocoa.
- Improving **quality of cocoa beans** according to the international standards and requirements. Technical knowledge and skills of cocoa farmers and supporting agencies need to be improved.
- Improving the **marketing chains**.
- Providing **financial/ credit assistance**.

World Agroforestry Centre (ICRAF) is one of 15 organizations under the CGIAR (Consultative Group on International Agricultural Research) umbrella. ICRAF aims to stimulate and conduct innovative research, development and capacity building to promote and support agroforestry for both human and environmental benefits. ICRAF has its headquarters in Kenya and six regional offices in the tropics and now cover 21 countries in Africa, Asia and Latin America.

The research bulletins are summary results of collaborative activities of ICRAF and partners in the "Recovery and Resilience of Livelihood and Natural Resources", mainly in West Aceh, after the Tsunami of 26th December 2004. These bulletins were prepared, first in Indonesian language, for a workshop in Meulaboh on 30 November 2006. The primary objective was to share relevant result findings and observations among government and non-government organisations and individuals involved in the post-tsunami recovery in West Aceh. The workshop and preceding research activities were supported by Ford Foundation Indonesia, EU Asia Pro-Eco Program and CGIAR.

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