

Adoption of ACIAR project outputs **2015**

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Cover: [left] Members of Nguni Farmers Cooperative, North West Province with some of their awards for herd performance (Photo: John Thompson); [top right] Small family sawmill sawing Acacia for furniture components near Danang, Vietnam (Photo: Michael Henson); [bottom right] An LGU technician (left) discusses vermicomposting with a farmer in Sugbongcogon, one of the Misamis Oriental satellite sites (Photo: Noel Vock).

Improving economic outcomes for smallholders growing teak in agroforestry systems in Indonesia (FST/2005/177)

DEDE ROHADI, TUTI HERAWATI AND TIEN LASTINI

Project number	FST/2005/177
Project title	Improving economic outcomes for smallholders growing teak in agroforestry systems in Indonesia
Collaborating institutions	Indonesia: Center for International Forestry Research (CIFOR); World Agroforestry Centre (International Centre for Research in Agroforestry); International Center for Applied Finance and Economics Institut Pertanian Bogor; Forestry Research and Development Agency; District Government of Gunungkidul, Yogyakarta Australia: School of Resources, Environment and Society, Australian National University
Project leaders	Dr Dede Rohadi (CIFOR)
Project duration	1 May 2007 – 31 May 2011
Funding	\$1,345,710 (ACIAR contribution \$790,114)
Countries involved	Indonesia, Australia
Commodities involved	Timber (teak)
Related projects	FST/2008/030, FST/2012/039

Motivation and aims for the project

Teak is among the most valuable timber species in Indonesia; it is used mainly for furniture. In Indonesia, this timber is produced from about 1.2 million hectares of industrial plantations of a state-owned company (Perhutani) and millions of smallholder plantations. Whereas the supply of teak from the industrial plantations has declined by 21% since 2007 (Perhutani 2008) to 431,517 m³ in 2013 (Perhutani 2014), the supply from smallholder plantations is increasing. Smallholder teak plantation therefore plays an increasing role in supporting furniture industries in the country, and providing income opportunities for farmers.

However, to move forward as more commercial businesses, smallholder teak plantations in Indonesia are facing various impediments, including:

- low quality of timber as a result of poor silviculture
- lack of capital to invest in teak planting and an inability to wait for the duration of a teak rotation before obtaining returns
- limited access to market information and linkages, leading to prices that are well below market rates, with high transaction costs for timber merchants
- unfavourable policies in smallholder teak production and marketing.

This project addressed these impediments and aimed to improve the economic benefits for the teak growers in Indonesia through three main objectives:

- improving returns for smallholder teak producers by introducing and adapting silvicultural technologies
- providing incentives for smallholder participation in profitable teak production by identifying and designing financing schemes
- enhancing market access by smallholder teak producers.

The project, which was undertaken during 2007–12, was funded by ACIAR with a total research budget of A\$810,114; it was implemented in Gunungkidul District, Province of Yogyakarta. The project was led by the Center for International Forestry Research (CIFOR) and involved several research institutions at international, national and local levels: the World Agroforestry Center (International Centre for Research in Agroforestry—ICRAF), the Australian National University, the Forestry Research and Development Agency, the International Centre for Applied Finance and Economics Institut Pertanian Bogor (InterCAFE-IPB), and the Kelompok Kerja Hutan Rakyat Lestari (Pokja HRL)—a consortium of NGOs under the District Government of Gunungkidul, Yogyakarta. All of the partner organisations were involved from the beginning of preparation of the research proposal.

Outputs—what the project produced

The project produced some technical and policy outputs, and built capacities among project beneficiaries. The technical outputs were described in technical reports (the final project report was published by ACIAR, and 11 unpublished technical reports complemented the final report), four policy briefs, three datasets and a survey questionnaire, three journal articles, eight conference papers, a manual book (in English and Bahasa

versions), four posters, five newsletters, three media releases and a video film. The policy outputs were produced in the form of four policy briefs, which were presented to the relevant policymakers at district level (the District Government of Gunungkidul), national level (the Ministry of Forestry) and global level (the boards of trustees of CIFOR and ICRAF).

The technical outputs addressed various problems experienced by smallholder teak growers in running their teak plantation businesses. The project provided farmers with practical tools on silvicultural and timber marketing strategies to improve the economic benefits from their teak plantations. It also provided farmers with a microfinance scheme and an institution model to help them access microcredit. On the policy front, policy briefs produced by the project covered policy and intervention options for policymakers at the local, national and global levels for improving the performance of smallholder timber plantation businesses. Among these project recommendations, some proposed follow-up actions have been delivered to the local government of Gunungkidul District. The project also proposed a revision of government regulation to simplify procedures for smallholders to obtain timber transport documents and reduce their transaction costs in marketing timber.

Besides the technical and policy outputs, the project has strengthened the capacity of individuals, groups and institutions, particularly at local and national levels. The project has increased the knowledge, skills and networks of these beneficiaries. At the local level, the project has trained about 1,200 personnel—mostly smallholder teak farmers in the district of Gunungkidul—particularly in the application of silvicultural techniques and marketing strategies for their teak plantations. The project also established six farmer demonstration trials (FDTs) as learning tools for farmers to practise good silviculture techniques. The project trained a number of farmers in operating a microfinance institution (LKM Gunung Seribu) to apply microfinancing schemes for teak growers. In addition, the project developed business networks for collaboration between farmer groups, government agencies and private timber companies.



Teak logs produced from small holder plantations. (Photo: Dede Rohadi)

In the context of research and development, at least 29 project personnel from seven institutions gained valuable experiences in conducting cooperative research to plan, implement, evaluate and report on various project activities. Their research knowledge and skills have improved through activities such as designing research methodology; undertaking surveys, focus group discussions, cross visits and training; establishing demonstration trials; analysing data; and writing reports. The project also supported several project team members and non-members in completing their studies. Seven people completed PhD programs, one person completed a Masters program, and two students completed undergraduate programs. All of these people were supported by the project through their involvement in the project activities, and access to data and information produced by the project.

Adoption—how the project outputs are being used

Project outputs have been used by project researchers and farmers in various ways at village, district, national and global levels. At the village level, the knowledge and skills from the project have been used by farmers to improve their teak plantation management and timber marketing strategies. Based on responses from surveyed farmers (74 farmers in total, comprising 24, 28 and 22 respondents on silviculture, microfinance and marketing aspects, respectively), the uptake of project outputs by farmers surveyed averaged 64%. Uptake of silviculture practices was higher (75%) than uptake of microfinance (57%) and marketing (59%) aspects.

Various levels of adoption of project outputs can be identified. Adoption level 3 (AL3) refers to considerable adoption by both farmers who participated in the project and farmers outside the project (non-participant farmers), indicating an impact on the broader farming community. Survey responses on silviculture outputs showed that 21% of farmer respondents identified as non-participants who have made considerable use of silviculture outputs from the project (AL3); 29% were project participant farmers who have made considerable use of silviculture outputs (adoption level 2—AL2); 25% were participating farmers who have only made some use of silviculture outputs (adoption level 1—AL1); and 25% of farmers had not taken up project silviculture outputs (adoption level 0—AL). The adoption of silviculture aspects was indicated by an increase in farmers' knowledge and skill in implementing some silviculture techniques, such as using high-quality seedlings, and applying thinning and pruning on their teak trees. The use and adoption of project facilities and intermediate outputs of the silviculture aspect—that is, the FDTs and the manual book for managing smallholder teak plantations—were limited to some farmer groups. The adoption rate is expected to increase in the future as a result of the existence of trained farmers and extension officers, and the continuing use of FDTs in future research activities.

The adoption rate of microfinance outputs can be categorised as *Nf*: the outputs were considerably adopted by initial users and to some extent by final users. Farmer responses to the survey can be categorised as 3% non-participant farmers making considerable use of outputs relating to microfinance (AL3), 43% of project participant farmers making considerable use of these project outputs (AL2) and 11% of project participant farmers making only some use of these outputs (AL1); the remaining 43% had not taken up the project microfinance outputs. The bookkeeping techniques introduced by the project were satisfactorily adopted and practised by a farmers' group savings and credit association. The adoption of the microfinance institution model was still challenging and needs more intensive extension activities.

The adoption of marketing outputs can be categorized as *NF*: the project outputs were considerably adopted by both initial and final users. Farmer responses to the survey were distributed as 23% AL3, 13% AL2, 23% AL1 and 41% AL0. Respondents stated that their market awareness had improved, and some farmer groups have developed market linkages with industries. The linkage between farmer groups and industries was demonstrated by the practice of supplying certified teak logs from farmers' groups to furniture industries.

At the national level, the project results were widely accepted by different parties, especially by policymakers in government institutions. The project recommendation to simplify regulation for the smallholder timber trade was well received by the Ministry of Forestry, and a new regulation (no. 30/2012) simplifies the procedures for smallholders obtaining timber transport documentation. At a broader level, many of publications produced by the project have been cited in scientific papers and used by policymakers. Various project outputs, both published and unpublished materials, have contributed to the pool of knowledge on smallholder timber plantations.

The adoption rate is expected to increase in the future when better silvicultural practices by farmers produce better growth and stem quality in their teak stands. In particular, it is anticipated that farmers will be more motivated to invest in good silviculture practices once they realise increased economic benefits from their timber selling. The intensity of the extension program implemented by the extension agencies will be the main driving factor for increasing the adoption of various project outputs at the farm level.

Impact—the difference the project has made or is expected to make

The project has great potential for economic impact on smallholder teak plantations in the medium and longer terms (about 5–10 years). This positive impact for farmers is anticipated as a result of 1,200 well-trained farmers who have adopted (64% uptake of project outputs) good silviculture practices, microfinance schemes and better timber marketing strategies developed by the project. The impact could be increased by the existence of a significant number (33%) of these trained farmers who voluntarily engaged in disseminating project results. Some farmer groups have practised collective marketing by supplying Forestry Stewardship Council–certified teak to furniture manufacturers. Besides the higher price premium (as much as 30% compared with uncertified timber), this collective marketing approach has increased the capacity of farmer groups to manage their collective assets, and develop mutually beneficial cooperation between farmer groups and furniture manufacturers.

Over the past few years, the area of smallholder teak plantations in Gunungkidul District has increased by 46%, from 28,675 ha in 2008 to 41,954 ha in 2013. Accompanied by better timber management practices, this increase in smallholder timber plantations will benefit the wider community in Gunungkidul District and allow the district to become an important supplier of teak wood to furniture industries in the region.

The revised policy on smallholder timber trade regulation has resulted in intended and unintended impacts. The revised regulation has simplified the procedure for obtaining timber transport documentation. This has lowered the transaction costs and provided greater opportunities for teak growers to obtain higher farm-gate prices from brokers. An unintended impact of this regulatory revision has been difficulty for the District Office of Forestry and Estate Crops in monitoring statistics for timber trade and production. Governments now need to allocate a modest budget to monitor timber production and trade from the district area.

The project increased the research capacity of the individual scientists and research institutions who were involved. It also strengthened research collaborations among research institutions, and developed networks between research institutions and senior decision-makers and policymaking organisations, including national and local government institutions, universities, and international and national NGOs, through their involvement as Project Advisory Group members. The project also contributed to raising the importance of smallholder timber plantation issues in the national and global research agenda.

The future impact of this project will be higher when markets recognise and reward improved smallholder timber quality. A higher selling price for better-quality timber will motivate farmers to apply better silvicultural practices. Strong commitment from governments, especially in providing intensive training programs for more smallholder growers in Indonesia in the use of project outputs, will increase the impact and benefits arising from the project. The project provided useful lessons for ACIAR as a funding agency by demonstrating the effectiveness of an action research approach to increase the adoption of project outputs and subsequently smallholder impacts.

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