A brief history of the FORDA–ICRAF research relationship

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On 18 April 1992, the Director General of the World Agroforestry Centre (ICRAF), Dr Pedro A. Sanchez, and the Director General of the Government of Indonesia’s Forestry Research and Development Agency (FORDA), Dr Wartono Kadri, signed a memorandum of agreement on a cooperative program for agroforestry research. The two organizations agreed to conduct agroforestry research, training activities, information exchange and development activities in accordance with Indonesia’s development objectives and ICRAF’s goals of mitigating tropical deforestation, land degradation and rural poverty through improved agroforestry systems.

To help achieve this, ICRAF established a regional research program for Southeast Asia. Bogor was chosen as the site of the regional headquarters because of Indonesia’s rich history of agroforestry systems, and because of its proximity to sister organizations, such as the newly created Center for International Forestry Research, the Asia-Pacific Agroforestry Network (APAN) of the United Nations’ Food and Agriculture Organization, and Bogor Agricultural University. The first office of ICRAF Southeast Asia was inaugurated in February 1993 at the FORDA campus.

Three events had particular significance in developing the guiding principles of the regional research program. The first occurred in August 1992, when the new Southeast Asia regional program team of scientists joined Indonesian colleagues from forestry and agricultural research institutions to select research sites for the international Alternatives to Slash and Burn project, initiated in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro. The second was an international workshop on ASB research methodology, which the Southeast Asia program hosted in Bogor in February–March 1993. The third was an international training course on land-use systems research methodology for the humid tropics of Asia, co-hosted by the Southeast Asia program and APAN. These events brought together scientists from across the region and the rest of the world to examine the key issues that would help shape the research agenda for Southeast Asia.

In 1995, the memorandum of agreement widened to cover a cooperative regional program on agroforestry research. The Minister of Foreign
Affairs, Dr. Ali Alatas, gave full authority to the Ministry of Forestry to sign the new agreement on behalf of the Government of Indonesia. The Director General of ICRAF and the Secretary General of the Ministry of Forestry, Dr Oetomo Soedjonopuro, signed the new agreement on 20 January 1995. In the same year, Indonesia’s Minister of Forestry, Dr Djamaludin Suryohadikusumo, authorised the relocation of the ICRAF office to the new international facilities built at Darmaga for the Center for International Forestry Research. In 2000, ICRAF also opened an office in the Manggala Wanabakti complex of the Ministry of Forestry in Jakarta, to ensure closer collaboration with senior decision-makers and scientists. ICRAF started using the brand name ‘World Agroforestry Centre’ in 2002, but did not change its legal identity.

The Southeast Asia program’s mandate was to conduct strategic research and to develop and disseminate more effective research methods. Those imperatives remain the same to this day. The team stated their intention to ‘identify and concentrate on the most important problems in agroforestry and provide strategic leadership in developing the research base to solve them’. They saw their research bounded by two themes: 1) the development of alternatives to slash-and-burn agriculture; and 2) the rehabilitation of degraded lands.

The Southeast Asia program first set about testing hypotheses applicable to each of the three major ecosystem zones common to the region, with a particular focus on the host country, Indonesia. On the forest margins, the hypothesis was that complex agroforests provided a superior alternative for small-scale farmers. Complex agroforests increased production
sustainability, increased biodiversity, reduced production risks and increased returns to labour compared to the alternatives of continuous food cropping or monocultural plantations. The second hypothesis stated that rehabilitating *Imperata* grasslands with small-scale agroforestry systems would be superior to plantation reforestation in terms of production, equitability and participation. For hilly farmlands, the team hypothesized that there were several pathways to sustainable farming. Among these, contour hedgerow systems initiated through natural vegetative strips provided distinct advantages as a superior, least-cost foundation upon which to build agroforestry-based, conservation farming.

These hypotheses were tested at sites in Indonesia under the auspices of the Alternatives to Slash and Burn international research project, which continues to this day, rebranded as the ASB Partnership for the Tropical Forest Margins. Around the same time, an *Imperata* grassland project began in collaboration with the Australian Centre for International Agricultural Research, which lead to a special issue of the *Agroforestry Systems* journal. Soon after, investigations began into policies concerning tenure and land uses, supported by the Asian Development Bank and the Ford Foundation. Dr AN Gintings of FORDA was actively engaged in the management team and FORDA researchers were much involved in integrated assessment teams that supported both projects.

Research by FORDA staff, Murniati, resulted in a widely cited journal article that posed a two-stage relationship between resource development and forest extraction. Murniati’s subsequent doctoral thesis in Wageningen, titled ‘From *Imperata cylindrica* grasslands to productive agroforestry’, involved Tropenbos International, FORDA and ICRAF. This work contributed to review chapters on the role of mycorrhiza in belowground interactions in tropical agroecosystems and included reference to broader agroforestry issues, published in the *Advances in Agroforestry* series.

FORDA researcher Hesti L. Tata, attached to ICRAF as a PhD candidate in 2005–08, completed her doctoral thesis on mycorrhiza in Dipterocarp enrichment planting in rubber agroforests. Her subsequent research has resulted in a number of articles in international journals, adding considerably to knowledge about rubber agroforests in Indonesia. From 2010 to 2012, Dr. Tata was seconded to ICRAF and worked on two research projects: Rapid Assessment of Ecosystem Services Provided by Sumatran Orangutan Habitat and Cost-Benefit Analysis, and Toward a Biodiverse Rubber Estate: Quick Biodiversity Survey of Bridgestone Sumatra Rubber Estate, North Sumatra.

Since 2012, Dr. Tata has been involved as a post-doctoral researcher with the continuing cooperation on developing agroforestry options for
peatlands. She is researching the domestication and germplasm of *Dyera polyphylla* (‘jelutung’ in Indonesian), a native peatland tree species. As part of the research, farmers are helping to develop agroforestry demonstration plots of *D. polyphylla* with other existing tree systems, such as coffee and betel nut, oil palm and rubber. The research runs parallel with the Reducing Emissions from All Land Uses project in Tanjung Jabung Barat district, which is funded by the European Union. As the early studies of the ASB Partnership for the Tropical Forest Margins program pointed to major issues in this arena, new projects were started that focused on policies concerning tenure, forest delineation and other land uses, supported by the Asian Development Bank and the Ford Foundation.

Our staff also worked closely with Dr. Krisfianti Ginoga of FORDA in a project in 2004, funded by the Australian Centre for International Agricultural Research, which explored carbon markets focusing on land-use change and forestry activities, with emphasis on smallholders’ agroforestry. At the same time, FORDA staff member, Dr. Niken Sakuntaladewi, worked with ICRAF researching ‘boundary organizations’. Dr. Sakuntaladewi was a member of a joint research project made up of staff from ICRAF and the Sustainability Science Program at Harvard University called Integrating Knowledge and Policy for the Management
of Natural Resources in International Development: The Role of Boundary Organizations. This study explored how well the boundary organization theory applied in the challenging context of linking knowledge with action to deal with the issues facing Indonesian agroforestry. The team found that boundary organizations could be most generally conceived of as ‘negotiation support’ institutions that were overtly engaged in the work of constructing both usable knowledge and the social order that creates and utilizes that knowledge.

ICRAF scientists have also been working closely with colleagues at the Directorate General of Forest Planning, Ministry of Forestry (Ditjen Planologi Kehutanan), on the Accountability and Local Level Initiative to Reduce Emission from Deforestation and Degradation in Indonesia project, funded by the European Union. Ditjen Planologi Kehutanan, as the primary partner, has demonstrated consistent commitment sharing essential data. Gathering this data has been a tremendous effort both in terms of resources and coordination between national and regional offices. Together with Mr. Saeful Rahman, a key staff member at Ditjen Planologi, we produced an analysis of Indonesia’s land-use and land-cover changes and their trajectories (1990, 2000 and 2005). This map complies with the Tier 2 or higher emissions estimation requirements of the Intergovernmental Panel on Climate Change.

From January 2010 until December 2011, Dr. Retno Maryani was seconded to ICRAF from the Research Centre on Forest Policy and Climate Change. During that time, Dr. Maryani worked with the ICRAF policy unit to analyze REDD+ in Indonesia. She published a working paper, *REDD+ in Indonesia: a historical perspective*, which documents the process of Indonesia’s engagement with REDD+ policy since the 1990s until the present. Dr. Maryani at that time also acted as liaison officer between ICRAF and FORDA.

ICRAF has also been working closely with FORDA to assist the establishment of the Agroforestry Research Centre in Ciamis, West Java. The cooperation has included development of the Indonesian National Strategy on Agroforestry Research, and training Ciamis staff in website development and maintenance, English-language scientific writing and research methods. Based on the memorandum signed by the director generals of ICRAF and FORDA, there are three main activities undertaken in collaboration.

1. **Methods training (April 2013)**
   Five methods were trained in parallel:
   1. methods for household economics research data gathering and analysis
   2. methods for gender research data gathering and analysis
3. methods to measure carbon
4. WaNuLCAS model to study tree and crop interactions and agroforestry systems
5. GenRiver model to assess hydrological function of a watershed.

In total, 31 staff from the Agroforestry Research Center (BPTA) in Ciamis, West Java were trained.

2. Research design and writing workshop (June 2013)
Five resource persons (four scientists from ICRAF and Dr. Hesti L. Tata from FORDA) trained 18 participants. Of the participants, four were from ICRAF, one from the National Research Institute Agency and 13 from FORDA, including eight from BPTA Ciamis, two from FORDA headquarters, and three from outreach forestry research centres in Kupang-East Nusa Tenggara, Aek Nauli in North Sumatra, and Banjarbaru in South Kalimantan. As a result of this activity, at least three abstracts will be submitted to the World Congress of Agroforestry to be held in New Delhi in February 2014.

3. Joint research study (August 2013–April 2014)
Two research proposals from BPTA Ciamis were approved by the Agroforestry and Forestry in Sulawesi project, which is funded by the Canadian International Development Agency. During the period August 2013–April 2014, they will carry out research studies pertaining to pests and diseases in cocoa agroforestry systems and estimating water yields and landscape carbon stocks in one of the sub-catchments of South Sulawesi. As a result of this activity, at least two working papers and two national journal papers will be published in 2014.

Other important collaborations include the inaugural Regional Agroforestry Day in Jakarta in 2011, which was jointly organized with FORDA, attracting representatives from throughout Southeast Asia and Indonesia. ICRAF has also been closely involved with the Working Group on Tenure, which is chaired by Pak Iman Santos, and the Lombok conference on Forest Tenure Reforms, which was organized with FORDA, the Ministry of Forestry, the Rights and Resources Initiative, and the International Tropical Timber Organization (ITTO). ICRAF is also collaborating with FORDA on social safeguards work, along with partners in the Participatory Monitoring by Civil Society of Land-use Planning for Low-emissions Development project in Papua.

We expect that this close working relationship will strengthen in years to come and we look forward to achieving the common goal of sustainable landscapes and livelihoods in Indonesia.
Further Reading


Kennedy School of Government, Harvard University; Bogor, Indonesia: World Agroforestry Centre Southeast Asia Regional Program.


Narendra BH, Roshetko JM, Tata HL and Mulyoutami E. 2012. Prioritizing underutilized tree species for domestication in smallholder systems of West Java. *Small-scale Forestry* 10.1007/s11842-012-9227-x


