Towards a sustainable Southeast Asia

Transforming lives and landscapes

HIGHLIGHTS 2010

World Agroforestry Centre

TRANSFORMING LIVES AND LANDSCAPES

Photo: Degi Harja

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Towards a sustainable Southeast Asia: transforming lives and landscapes: highlights of 2010

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Photo: Chandra Panjiwibowo

Highlights
World Agroforestry Centre Southeast Asia Program 2010

Ujjwal Pradhan, Regional Coordinator

The World Agroforestry Centre has demonstrated its commitment to rigorous, relevant and development-oriented research since its establishment in Southeast Asia in 1993.

In 2010, we continued to find innovative methods to bring to light issues of critical importance to poor farmers, development agencies, governments and donors.

We have strategically focussed on global issues with local impact across the Southeast Asian region, ensuring that sustainability is at the forefront of all we do. With programs reaching across Asia from Tibet to the Philippines and from the DPR Korea to Indonesia, and encompassing a range of activities from REDD to the red ape, from farmers' field schools to the Intergovernmental Panel on Climate Change, the Centre's scope is far-reaching and focussed on linking science with sustainability on the ground.

Globally, one of our most important recent contributions has been the development and promotion of a new analytical framework: REALU or Reducing Emissions from all Land Uses. This concept is based on ICRAF's research in Indonesia, Vietnam, Nepal, Cameroon and Peru, funded by the Norwegian Agency for Development Cooperation. The REALU concept goes beyond the limited definitions inherent in REDD to encompass all types of land uses in a landscape, thereby more realistically accounting for emissions and obviating the need to agree upon a definition of 'forest'.

Complementary to this work has been our research into effective environmental services schemes. Through the Rewarding Upland Poor for Environmental Services (RUPES) project, we have worked with local communities, governments and NGOs in Nepal, Indonesia, Thailand, China, the Philippines and Vietnam to identify, establish and monitor schemes that can reward people for protecting the environment. This work has been funded by the International Fund for Agricultural Development.

As part of equipping ourselves and the region with the ability to assess situations effectively and efficiently, we devised a number of on-the-ground negotiation-support methodologies through the Trees in Multi-use Landscapes in Southeast Asia (TULSEA) project, funded by the German Federal Ministry for Economic Cooperation and Development. Developing the methodologies in the field in China, Indonesia, the DPR Lao, the Philippines, Thailand and Vietnam has given us tools that we have shared with hundreds of researchers, community members, NGOs and government staff throughout the region, building their capacity to use scientific knowledge to sustainably adapt their environments.

Our many other projects included enhancing the abilities of smallholder farmers to grow and manage teak, estimating the benefits to Sumatran orangutan populations of establishing

forest corridors in a landscape influenced by conflicting land-use claims, assessing delayed spring phenology on the Tibetan Plateau, improving the connectivity of the Mekong region, and linking with Swedish researchers in a project that assessed climate vulnerability in poor areas of Vietnam and Kenya.

We collaborated with the Ford Foundation to expand community-based natural resources and environmental services management links with poverty reduction, markets, gender mainstreaming and ecosystem integrity on Lombok Island and to research efficient and fair ways of avoiding carbon emissions in Indonesia's forest margins so as to identify the next steps in negotiation support systems. We also worked with the David and Lucille Packard Foundation to unpack 'carbon rights' and the question of legality in Indonesia. In Vietnam we collaborate closely with the International Livestock Research Institute (ILRI) and the Center for International Forestry Research (CIFOR). At each of our offices we host and supervise postgraduate students and seconded staff from governments and development agencies.

My role as regional coordinator grants me the privilege of seeing these projects and relationships develop from the proposal stage through implementation to achievement of scientific and development impact on the ground. It is deeply satisfying to be part of an organization that makes such a significant contribution to food security, sustainable livelihoods, watershed and ecosystem health, climate adaptation and mitigation and biodiversity. To achieve this, we work with all levels of society to ensure that our processes are consistent with our vision that agroforestry opportunities are made available to all people in the region so that they have access to natural resources, health, social, financial and physical security in a manner that respects livelihood choices, diversity and the environment.

I would like to take this opportunity to thank our funders and partners for their enthusiastic support and participation in our shared efforts to improve the livelihoods of poor farmers and the health of the planet.

Photo: ICRAF Bogor collection

Real emission reduction with REALU

To sustain life on the planet requires us to reduce our emissions of carbon dioxide and other greenhouse gases. However, our research, funded by the Norwegian Agency for Development Cooperation, has shown that the international focus on schemes to reduce emissions from deforestation and degradation, known as REDD, has significant limitations.

REDD is unlikely to be effective if it remains narrowly focussed on forests.

'Forest' is a highly contested term, with at least five different definitions depending on who you are talking to. For example, we have found that in Indonesia one-third of emissions from deforestation and degradation come from areas not officially designated as 'forest'. This means that to measure emission reduction we need to assess the whole landscape.

Our results led us to propose a more comprehensive, fairer and effective system we call REALU or Reducing Emissions from All Land Uses. This system takes into account emissions not only from deforestation and forest degradation but also from agriculture. We also developed methods for dealing with conflict over land tenure, a major problem throughout Southeast Asia, because 'forest' implies an institution rather than trees, so new solutions are needed before REDD can be achieved.

REALU allows decision makers to account for all of the emissions from a landscape and devise holistic policies and actions, with much easier inclusion of 'leakage' and 'additionality'. Significantly, we have been able to contribute baseline estimates of Indonesia's carbon stocks and emissions through this and related projects.

www.worldagroforestrycentre.org/sea/projects/allreddi

Presenting the complete picture at Cancun

Meine van Noordwijk
The Centre's principal scientist and chief science advisor, was interviewed by Climate Change TV at COP 16

In the interview, which can be seen on Youtube, Dr van Noordwijk emphasised the importance of the REALU concept and his confidence that the global community will take it up fully in future negotiations.

http://www.youtube.com/watch?v=p_sHSh3Z7Zo

Ensuring the world has the best science

Centre scientist is lead author for IPCC assessment report

Dr Rodel Lasco
Coordinator of the World Agroforestry Centre Philippines office, was selected as Lead Author for Chapter 24, Asia, for the Fifth Assessment Report of the Working Group 2 to the Intergovernmental Panel on Climate Change.

'Though I'm well aware of the challenging responsibilities this commitment entails, I am greatly honoured to receive this chance to serve the world and the scientific community.'

Dr Lasco also served as coordinating lead author for the Fourth Assessment Report released in 2007.

CASE STUDIES

The Dak Nong story

The Highland Plateau is a major 'hot spot' for converting forest to agriculture in Vietnam. On average, from 1990 to now, forest was lost at a rate of 15 000 ha per year. As a result, forest cover declined from 75% in 1985 to 60% in 2009. The annual rate of deforestation in the Highland Plateau was the highest of all regions, accounting for 46.3% of the forest area lost in the whole country. It is understandable why the Highland Plateau was selected by the Ministry of Rural Development and Agriculture to be the focus of REDD+ pilot activities. The rapid increase of population, together with unsustainable land use in this area has lead to rapid degradation and deforestation.

The REALU approach applied in Dak Nong has shown that the main drivers of deforestation in the area are expansion of industrial perennial crops as well as shifting cultivation. From a stakeholder consultation, the underlying causes of the drivers of deforestation were identified as poor land management and planning, accelerated immigration from other parts of the country and the financial profitability of land conversion. Further analysis highlighted weak land-use planning, where the planned land use does not compare to the actual land use. The greatest difference can be seen in the loss of protected natural forest: in the period 2006–2008 more than 50 000 ha of this type of forest was converted to other land uses whereas it should have been kept protected according to land-use plans. The analysis shows that some land-use conversions are too profitable to stop, for example, natural production and protection forest to rubber, though even the relatively low carbon price of today (USD 5) could decrease the majority of deforestation and degradation.

Hutan Desa in Indonesia

Contested rules between the state and local communities over the use and protection of forests are a threat to Indonesia's forests, environmental services and livelihoods. Success in forest protection and reducing emissions requires conflict resolution. The village forest (Hutan Desa) regulation by the Indonesian Minister of Forestry (P.49/Menhut-II/2008) details how to reconcile forest management targets and livelihood interests of forest-edge villages within the framework of a permanent forest estate.

Lubuk Beringin in Bungo district, Jambi province, Sumatra, became the first village in Indonesia to secure such an agreement. Our analysis of the process, stakes and social capital that bridged local, district and national levels for the Hutan Desa agreement aims to help in reducing transaction costs for wider application as part of any emissions reduction scheme, identifying locally appropriate mitigation action as part of national strategies and examining co-investment in stewardship for local, national and global benefits.

Selected publications

Van Noordwijk M, Minang PA, Dewi S, Hall J, Rantala S. 2009. *Reducing emissions from all land uses (REALU): the case for a whole landscape approach.* ASB Policybriefs 13. Nairobi, Kenya: ASB Partnership for the Tropical Forest Margins.

Velarde SJ, van Noordwijk M, Suyanto, eds. 2009. *Perceptions of fairness and efficiency of the REDD value chain*. ASB Policybriefs 14. Nairobi, Kenya: ASB Partnership for the Tropical Forest Margins.

Van Noordwijk M, Minang PA. 2009. *If we cannot define it, we cannot save it.* ASB Policybriefs 15. Nairobi, Kenya: ASB Partnership for the Tropical Forest Margins.

Contributing to reducing emissions from Indonesia

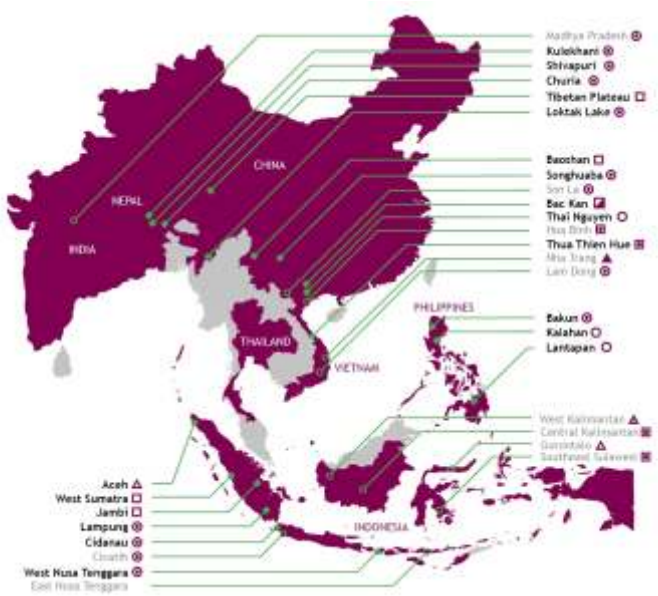
In 2010, we provided advice to the Government of Indonesia and international agencies on national carbon accounting, presenting our results through seminars, workshops and conferences across Indonesia. We particularly addressed the Government's Presidential Working Unit for Development Supervision and Control, National Development Planning Agency (Bappenas), National Council of Climate Change and the United Nations Development Programme and UN-REDD. Consultation with the Working Unit and Bappenas was mostly about land-cover change and data for calculating historical rates of deforestation in the provinces as part of the national strategy for REDD. We presented at two regional consultations on REDD+ strategy in Papua and Jambi.

Several recommendations need to be prioritised: encouraging policy on recognition of indigenous people and land tenure; financial and institutional interventions related to monitoring, reporting and validating; socialisation at the community level about the data and all the components; establish REDD+ institutions at the sub-national level and increase the capacity of local stakeholders. Last but not least, it is very important to coordinate efforts among the various agencies (Bappenas, Working Unit, ministries related to the National Council of Climate Change) for better communication and processes.

Dr Meine van Noordwijk and Dr Sonya Dewi were invited to be part of the international and national experts providing comment on the National Strategy on REDD+ in Bali in 2010. The strategy was drafted by a team under the coordination of the Working Unit, led by Bappenas, and comprised people from relevant ministries (Forestry, Environment, Agriculture, Finance and Internal Affairs). We were also appointed by the Working Unit to be part of a small team to review REDD+ pilot proposals from eight provinces.

Photo: Kusuma Wijaya

RUPES



One of the keys to a sustainable Southeast Asia is combining poverty reduction with emission reduction.

Just how to achieve these dual goals has been the focus of the Rewarding Upland Poor for Environmental Services or RUPES project.

The multi-year project with sites in seven countries in Southeast Asia set out to test a range of possible environmental services schemes that would reward poor people for protecting the environment and the services it provides to others.

It became clear that upland poor were maintaining watersheds that provided water for people living downstream in intensive agricultural and urban areas.

We then set out to see how downstream users could reward upland people for their work and how the rewards could be distributed fairly and efficiently.

We now have identified a range of scenarios across the region that can be deployed to achieve the dual goals.

In 2011 we will be publishing more material that details and synthesises the various elements for use by development agencies, governments, local communities and NGOs

http://rupes.worldagroforestry.org

Photo: Edwin Jonson

Selected publications

Leimona B, Laxman J. 2010. *Eco-certified natural rubber from sustainable rubber agroforestry in Sumatra, Indonesia*. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Regional Program.

Leimona B, Jack BK, Lusiana B, Pasha R. 2010. *Designing a procurement auction for reducing sedimentation: a field experiment in Indonesia*. Singapore: Economy and Environment Program for Southeast Asia.

Lasco RD, Cruz RVO, Pulhin JM, Pulhin FB. 2010. *The case of Pantabangan-Carranglan watershed: assessing climate change impacts, vulnerability and adaptation*. Los Baños, Philippines: World Agroforestry Centre (ICRAF) Philippines.

Villamor GB, Leimona B. 2010. *An innovative strategy to reward Asia's upland poor for preserving and improving our environment*. In Khmer. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Regional Program.

CASE STUDIES

Philippines

In the Philippines, RUPES supported two pilot sites—Bakun, Benguet, and Kalahan, Nueva Vizcaya—in developing rewards for watershed services and carbon sequestration, respectively.

In Bakun, a substantial output of the program has been an analysis of existing policies that would affect the development of a pro-poor rewards mechanism in Bakun watershed.

Significant results and recommendations were identified, one of which was preparation of the Bakun integrated watershed development and management plan.

In Kalahan, RUPES activities equipped the Kalahan Educational Foundation, an indigenous people's organisation, to participate in carbon-trading activities.

Aside from the two pilot sites, three of the RUPES learning sites—Sibuyan Island (Romblon), Baticulan (Negros Occidental) and Lantapan (Bukidnon)—have benefited from our rapid appraisal tools and other technical assistance for assessing the potential for developing rewards schemes.

These achievements will be implemented in more sites in the Philippines and other Asian countries during RUPES phase 2.

China

China's rangelands, located at the 'Roof of Asia', provide essential environmental services to more than a billion downstream inhabitants.

Rangeland degradation is a national and regional ecological security concern.

Degradation also directly affects the livelihoods of herders, who are not only among the poorest in the country, but also marginalised from policy-making processes.

As policy makers begin to design a large-scale payments for environmental services scheme targeting the nation's rangelands, RUPES works with national policy advisors to improve their understanding of potential impacts on herders' livelihoods and to incorporate herders' perspectives into policy recommendations.

Photo: Grace Villamor

Photo: Pornwilai Saipothong

CASE STUDY

Thailand

Mount Doi Inthanon National Park's natural teak stocks have been logged to exhaustion and opium revenues have vanished after it was outlawed but other environmental services are still important, such as watershed functions, biodiversity and scenic beauty that can attract tourism, along with carbon stocks. The government also wants to rapidly expand Thailand's protected area system to ensure ecological connectivity between all upland portions of river basin watersheds in the upper north region.

Our approach here was to seek development of a market-based mechanism to mediate relationships between the community-based service providers and the service buyers (tourists). Appropriate supporting and co-investment roles could then be identified for the park and other institutions. This would include initial infrastructure and human resource investments, as well as monitoring and assessment of the real impacts of the mechanisms on both the environmental services provided by the park and the livelihoods of people employed. Given the bureaucratic and political context of Thailand, a more market-based approach that requires a minimum level of reliance on state processes appears to be the most promising and innovative option available.

Tools for sustaining Southeast Asia

Many areas rich in natural resources are correspondingly attractive to a range of people, not only to those who live in the area. The management of those natural resources can only be successful if conflict between the various interests is avoided.

Accordingly, the Centre, in partnership with the German Federal Ministry of Economic Cooperation and Development and the Deutsche Gesellschaft für Technische Zusammenarbeit, set out to develop a range of methods ('tools') that can be applied to a range of potential conflict scenarios associated with natural resources in Southeast Asia, through the Trees in Multi-Use Landscapes in Southeast Asia (TULSEA) project.

Since 2007, we have worked closely with farmers, government agencies, universities and non-government organizations in six countries to create or improve a number of tools, databases and computer models that can give solid scientific knowledge to farmers and others to help inform discussions and clarify contentious issues.

The development of the tools, models and databases has involved 19 sites in six countries (10 in Indonesia, 3 in the Philippines, 1 in Thailand and 5 in Vietnam), 15 training sessions with nearly 300 participants and more than 49 publications (flyers, posters, books, journal articles, chapters, manuals, newsletters, audio-visuals).

http://www.worldagroforestrycentre.org/sea/projects/tulsea/

TULSEA test site locations

Tools

- Participatory Landscape Appraisal (PaLA)
- Participatory Analysis of Poverty, Livelihoods and Environment Dynamics (PAPOLD)
- Rapid Appraisal of Drivers of Land-Use Change (DriLUC)
- Rapid Agroforestry systems and technology (RAFT)
- Rapid Marketing Appraisal (RMA)
- Rapid Hydrological Appraisal (RHA)
- Rapid Landslide Mitigation Appraisal (RaLMA)

TUL SEA

- Rapid Carbon Stock Appraisal (RaCSA)
- Rapid Oxygen Supply Appraisal (ROSA)
- Rapid Agro-Biodiversity Appraisal (RABA)
- Quick Biodiversity Survey (QBS)
- Rapid Tenure Assessment (RaTA)
- Barrier Analysis for Tree Enhancement (WNoTree)
- Fair and Efficient REDD Value Chains Allocation (FERVA)
- Analysis of Land Use and Cover Trajectory (ALUCT)
- Biofuel Emission Reduction Estimator Scheme (BERES)
- REDD/REALU Site-level Feasibility Appraisal (RESFA)


Photo: Ni'matul Khasanah

Databases

- Agroforestry tree
- Seed supply
- Wood density

Models

- Functional Branch Analysis (FBA)
- Water, Nutrient and Light Capture in Agroforestry Systems (WaNuLCAS)
- Spatially Explicit Individual-based Forest Simulator (SExI-FS)
- Generic River Flow (GenRiver)
- Forest, Agroforest, Low-value Landscape or Wasteland? (FALLOW)
- Local Ecological Knowledge (LEK)
- Indicator of watershed quality (FlowPer = Flow Persistence)


Photo: Lisa Fitzgerald

CASE STUDIES

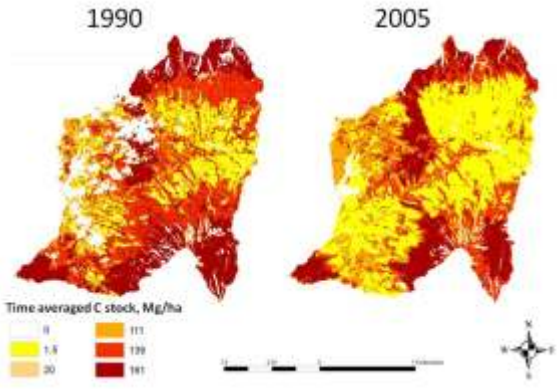
Kalikonto watershed, Malang, East Java, Indonesia

A combined team from the Faculty of Agriculture, University of Brawijaya, Malang, and the World Agroforestry Centre's Indonesia program used the RaCSA method to estimate carbon-stock changes in the Kalikonto watershed, Malang.

Extrapolation of carbon stock at plot through to watershed levels was done by multiplying the area of each land-cover type with its time-averaged aboveground carbon stock.

Over 15 years, carbon lost from the whole watershed was estimated to be 25 924 t/ha, equivalent to a yearly carbon loss of 1.48 t/ha. Carbon lost from natural forest was about 1.09 t/ha/yr and tree plantations lost 0.25 t/ha/yr. Carbon lost from coffee-based agroforestry systems was relatively small, about 0.05 t/ha/yr. Increasing the area of annual crops in 2005 lead to a small gain of carbon stock in the landscape of about 0.03 t/ha/yr but the carbon lost from the landscape exceeded this.

After use of the RaCSA method, the team concluded that planting more trees (damar, pinus, mahogany) in the landscape through the reforestation program of the forest estate (PERHUTANI) during the 1990–2005 period was not able to reduce the carbon lost from the landscape. Planting more trees in the landscape in agroforests and plantations may compensate for the loss of carbon through forest conversion.



Distribution of carbon density in Kalikonto sub-watershed in 1990 and 2005

Photo: Kurniatun Hairiah

Lantapan, the Philippines

Downstream stakeholders in the Manupali watershed were concerned about the reducing quantity, quality and regularity of water flow from the Lantapan area. There was, however, no common understanding of the main causes of the problem.

After training by the TULSEA project, the Bukidnon Environment and Natural Resource Office used our methods in two municipalities in Tugasan sub-watershed of Manupali watershed, to address the problem.

Rather than the suspected culprits—upstream degraded land caused by poor farmers—the researchers found that the problems were caused by water extraction by banana plantations, both legal and illegal.

Using this information, the local government began reward schemes for farmers who adopted and practised sustainable farming systems and triggered an investment forum for watershed management.

When the local government drove the process, existing inefficiencies became noticed and the government's limited funds were used more efficiently.

The Lantapan case shows that providing comprehensive, optimal and balanced information based on TULSEA research methods can lead to effective action.

Evergreen agriculture the seed of a sustainable Southeast Asia

Evergreen agriculture is the seed of a sustainable Southeast Asia.

While crops come and go, trees add permanence to a landscape. Our core business is 'fruitful forests', 'productive trees that farmers want' or 'evergreen agriculture', call it what you will, but mixing long-term tree-crops with annual crops forms the essence of human food and income security and environmental sustainability.

We are able to carry out projects of global and regional importance that deal with climate change and carbon emissions precisely because of our decades of research into productive trees on farms.

We have developed an acute awareness that the behaviour of people on a forest's margin is influenced by a range of local, national and international interests.

Our knowledge and networks are wide and deep, addressing villagers' needs, local government issues with conflicting regulatory regimes, national policy issues and international conventions.

We continue to extend our research for agroforestry development throughout Southeast Asia through a range of projects, both large and small.

Evergreen agriculture

Evergreen agriculture is where trees are integrated into annual food crop and livestock systems; in this way, a green cover on the land is sustained throughout the year. These systems bolster nutrient supply through nitrogen fixation and water conservation, and they increase the direct production of food, fodder, fuel, fiber and income from products produced by the trees.

China has 250 million farm families, most of whom have one hectare or less. It has limited per capita land and water resources. It is likely to face increasing water stress and rising temperatures over the coming decades. Yet, China manages to feed its people. Even more, it has a strategy for a modern, productive, clean, climate-resilient, low-carbon agriculture. For two decades, China has supported comprehensive programs of landscape restoration, focusing on its hilly areas. As a result, productivity has grown and ecosystems have been restored and are more resilient to floods and drought.

Inger Andersen
Vice President, Sustainable Development
The World Bank

'Agricultural Development, Food Security and Climate Change: Intersecting at a Global Crossroads', Agriculture and Rural Development Day 2010, COP 16, Cancún, Mexico. See http://beta.worldbank.org/content/agricultural-development-food-security-and-climate-change-intersecting-global-crossroads

CASE STUDY

DPR Korea

A pioneering agroforestry project in the Democratic People's Republic of Korea is restoring heavily degraded landscapes and providing much-needed food for communities living on sloping land.

Previously malnourished communities are now producing their own trees and growing chestnut, walnut, peaches, pears and other fruits and berries as well as medicinal bushes. They have more food and vitamins and are earning income through trading.

What started out with just three user groups has since expanded to 65 user groups in seven counties, with several hundred hectares of sloping land now under sustainable management. And the project is still growing.

http://www.worldagroforestry.org/sea/?q=node/360

CASE STUDIES

Smallholder teak, Indonesia

Teak production and furniture manufacture is a major industry in Java, involving about 1.5 million households. Although teak has a high value, smallholders are not benefiting from its production as they should. The reasons for this include poor silvicultural techniques, limited market knowledge and restrictive timber regulation policies. Together with our partners, we conducted farmer demonstration trials; published manuals and guidelines for improved practices (developed with key stakeholders); investigated financing schemes for smallholders; built market awareness amongst farmers and local development agencies; and published policy briefs and associated policy dialogue related to the regulatory framework. Funded by the Australian Centre for International Agricultural Research.

www.worldagroforestrycentre.org/sea/node/114

Tree nurseries in the Philippines and Vietnam

Philippines

The current organization of the public and private sector nurseries was not providing farmers with seedlings of appropriate quality in an equitable manner. With this project, we are improving the economic efficiency and policy environment of the Philippines' tree nursery sector, utilising a policy-assessment model to identify appropriate intervention points for the nursery sector at both the local and national levels.

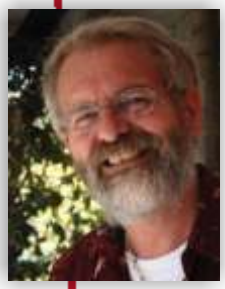
Vietnam

Three sites have been selected for the study, representing different agro-ecological zones, in northwest, central uplands and central coastal Vietnam. These areas were selected owing to their high rate of poverty, active involvement in the Government of Vietnam's national tree-planting program and the significant role trees are already playing in poverty reduction and landscape rehabilitation. Existing operators in each site have been interviewed to identify their technical and business capacity, infrastructure, production processes, entrepreneurship, quality of germplasm, quality of planting material and the source and use of germplasm. Based on this information we will be advising all stakeholders of the best methods to improve the quality of Vietnam's tree nurseries.

Photo: Iwan Kurniawan

Key staff

Ujjwal Pradhan
Regional Coordinator, World Agroforestry Centre Southeast Asia.
Joined in 2008. Country of origin: Nepal. Dr Pradhan is based in Bogor, Indonesia. He is responsible for leading scientific teams, mobilising resources, building partnerships, conducting research, reporting and managerial supervision for Indonesia, the Philippines, Thailand, Lao PDR, Vietnam and China. Dr Pradhan has a PhD in development sociology from Cornell University. His dissertation focussed on property rights and state intervention in hill irrigation systems in Nepal. He is on the board of trustees of the Center for People and Forests (RECOFTC).



Meine van Noordwijk
Chief science advisor.
Joined in 1993. Country of origin: Netherlands. Dr van Noordwijk guides the global integration of the Centre's science and is the leader of our global research program on environmental services. He also participates in a number of funded projects. He holds a PhD from Wageningen University, Netherlands, on roots, plant production and nutrient-use efficiency.

Minh Ha Hoang
Vietnam coordinator.
Joined in 1996. Country of origin: Vietnam. As senior scientist and country coordinator, Dr Hoang is responsible for leading the overall program in Vietnam, ensuring the quality, integration, planning and implementation of all activities. Dr Hoang holds a PhD in soil science from the Swedish University of Agricultural Sciences.

Jianchu Xu
China and East Asia Node coordinator.
Joined in 2007. Country of origin: China. Dr Xu is the senior scientist and country coordinator, based in Beijing, as well as visiting professor at Kunming Institute of Botany, Chinese Academy of Science. He gained his PhD from China Agricultural University on environmental sciences and watershed management. He is responsible for all aspects of the Centre's operations in China and East Asian countries.

Rodel D Lasco
Philippines coordinator.
Joined in 2006. Country of origin: Philippines. Dr Lasco is responsible for assuring the quality, integration, planning and implementation of all our activities in the Philippines. Dr Lasco holds a PhD Forestry in silviculture and environmental studies from the University of the Philippines at Los Baños. He is also the coordinating lead author for Chapter 24, Asia, of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

David Thomas

Senior policy analyst and Thailand coordinator. Joined in 1995. Country of origin: USA. Dr Thomas coordinates our activities in Thailand. He has a PhD in wild land resource science and a BS in soils and plant nutrition from the University of California, Berkeley, and an MS in horticulture (pomology) from the University of California, Davis.

Retno Utaira

Management services leader. Joined in 2002. Country of origin: Indonesia. Ms Utaira oversees the provision of services in the areas of finance and budget, human resources, general administration, information technology and publishing , contracts and project development support; coordinates with the national teams in Indonesia, Philippines, Thailand, China and Vietnam; and liaises with Headquarters in Nairobi. Ms Utaira is a registered accountant. She holds an MM/MBA in International Management from the Institut Pengembangan Management Indonesia (Jakarta)/Monash University (Melbourne).

Photo: Ni'matul Khasanah

Projects and donors supporting a sustainable Southeast Asia in 2010

CHINA

- Rural energy production from bio-energy: Center for Mountain Ecosystem Studies
- Making the Mekong connected: development of carbon market and conservation financing mechanisms for multifunctional landscape bio-corridors in the Upper Mekong: German Federal Ministry of Economic Cooperation and Development and the Deutsche Gesellschaft für Technische Zusammenarbeit
- Democratic People's Republic of Korea: Backstopping sloping land: Swiss Development Cooperation
- Chinese trade and investment in Africa: assessing and governing trade-offs to national economies, local livelihoods and forest ecosystems: German Federal Ministry of Economic Cooperation and Development and the Deutsche Gesellschaft für Technische Zusammenarbeit
- Project design document and contribute to the drafting of a carbon accounting methodology to support the implementation of the Three Rivers Sustainable Grazing Project: Food and Agriculture Organization
- NERC/ESPA greenhouse gas mitigation from Chinese agriculture (technical, political, economic efficiency and equity impacts): Scottish Agricultural College
- Analysis of forest program impacts on environment and ecology: Rights and Resources Group
- Pilot field activities in Qinghai Province for supplying carbon offset credits from improved grassland management practices amongst smallholders: Food and Agriculture Organization
- Rewards for, use of and shared investment in pro-poor environmental services (RUPES 2): International Fund for Agricultural Development

INDONESIA

- Trees in multi-use landscapes in Southeast Asia (TULSEA): German Federal Ministry of Economic Cooperation and Development and the Deutsche Gesellschaft für Technische Zusammenarbeit
- Improving economic outcomes for smallholders growing teak in agroforestry systems in Indonesia: Australian Centre for International Agricultural Research
- Research on biodiversity conservation at landscape level (Landscape Mosaics): Swiss Agency for Development Cooperation
- Accountability and local level initiative to reduce emission from deforestation and degradation in Indonesia (ALLREDDI): European Union
- Rewards for, use of and shared investment in pro-poor environmental services (RUPES 2): International Fund for Agricultural Development
- Reducing greenhouse gas emissions associated with oil palm in Indonesia: Indonesian Palm Oil Commission
- Reducing emissions from deforestation and degradation through alternative land-uses in rainforests of the tropics (REDD-ALERT): European Union
- Toward a biodiverse rubber estate: quick biodiversity survey of Bridgestone Sumatra Rubber Estate, North Sumatra, Indonesia: Bridgestone Japan
- Power relations and REDD: unpacking 'carbon rights' and addressing the question of legality in Indonesia: David and Lucille Packard Foundation
- Efficient and fair ways of avoiding carbon emissions in Indonesia's forest margins: next steps in negotiation support systems: Ford Foundation
- Eco-certified natural rubber from sustainable rubber agroforests in Sumatra, Indonesia: Waseda-Bridgestone Initiative (Bridging Human Activities and Development of the Global Environment, Research and Action Support Program), Japan
- Expand community-based natural resources and environmental services management links with poverty reduction, markets, gender mainstreaming and ecosystem integrity on Lombok Island: Ford Foundation

- Environmental impact assessment of rubber agroforestry systems: Standing Panel on Impact Assessment of the Consultative Group on International Agricultural Research
- Southeast Asian Network for Agroforestry Education: Swedish International Development Cooperation Agency
- Human livelihoods, ecosystem services and the habitat of the Sumatran orangutan: rapid assessment in Batang Toru and Tripa: United Nations Environment Programme through PanEco

PHILIPPINES

- Rewards for, use of and shared investment in pro-poor environmental services (RUPES 2): International Fund for Agricultural Development
- Enhanced profitability of selected vegetable value-chains in the Southern Philippines and Australia (Component 1: Integrated soil and crop nutrient management in vegetable crops in the southern Philippines): Australian Centre for International Agricultural Research
- Support to decentralise tree seed systems in communities: Australian Centre for International Agricultural Research
- Enhancing tree seedlings supply via economic and policy changes in the Philippines nursery sector: Australian Centre for International Agricultural Research
- Evaluation and adoption of improved farming practices on soil and water resources, Bohol Island: Australian Centre for International Agricultural Research
- Overcoming barriers to smallholder carbon forestry in the Philippines: Center for Development Research, Germany
- Synthesis of climate change and forests in Asia Pacific: Food and Agriculture Organization
- Disasters and climate change: UN International Strategy for Disaster Reduction

VIETNAM

- Trees in multi-use landscapes in Southeast Asia (TULSEA): German Federal Ministry of Economic Cooperation and Development and the Deutsche Gesellschaft für Technische Zusammenarbeit
- Rewards for, use of and shared investment in pro-poor environmental services (RUPES 2): International Fund for Agricultural Development
- Reducing emissions from deforestation and degradation through alternative land-uses in rainforests of the tropics (REDD-ALERT): European Union
- Opportunity and constrains of smallholder's involvement in seeds and seedling supply in Vietnam: World Agroforestry Centre
- Trees and people adapting to climate change: Swedish Research Council (FORMAS)
- Trees for livelihoods of smallholder farmers in Northwest Vietnam: Australian Centre for International Agricultural Research
- Enhancing carbon stocks (I-REDD): European Union
- Reduced emission from all land uses (REALU): Norwegian Agency for Development Cooperation

THAILAND

- Rewards for, use of and shared investment in pro-poor environmental services (RUPES 2): International Fund for Agricultural Development
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Photo: Trudy O'Connor

Photo: Pornwilai Saipothong

About the World Agroforestry Centre

The World Agroforestry Centre is an autonomous, non-profit research organization whose vision is a rural transformation in the developing world where smallholder households strategically increase their use of trees in agricultural landscapes to improve their food security, nutrition, income, health, shelter, energy resources and environmental sustainability. The Centre generates science-based knowledge about the diverse roles that trees play in agricultural landscapes and uses its research to advance policies and practices that benefit the poor and the environment.

www.worldagroforestrycentre.org/sea

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