

Carbon trading in the Philippines

Numerous challenges to overcome for smallholders to benefit

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Growing trees takes time: If carbon trading is not profitable smallholders won't participate. *Photo: A.E. Pasa*

Forests provide enormous environmental services to various societies on earth. However, in many countries – such as the Philippines – the undue pressure imposed on forests by increasing populations has relentlessly damaged these ecosystems. The Philippines was the world's leading tropical hardwood producer in 1975, but became a timber-importing nation in 1994 (Chiong-Javier 2001). The Philippine Government has since designed various programs to protect and conserve the remaining forest¹. The Community-Based Forest Management Program (CBFMP) introduced in 1995 in particular recognized the indispensable role of local people in managing the remaining forest resources in the country. The focus of forest management has thus shifted from technical commercial forestry to a more people-oriented social forestry. The more recent scenario is a paradigm shift in the forestry sector to small-scale, multiple-product-based, people-oriented, and community-based sustainable forest management (Mangaoang 2002). However, improving the socio-economic condition of the rural populace (particularly smallholders) remains a challenge for the Philippine government.

The focus of forest management has thus shifted from technical commercial forestry to a more people-oriented social forestry.

One opportunity for farmers to increase their annual income is through some form of payment for the environmental services they provide, since vegetation in their small-scale tree farms, agroforestry farms and Community-Based Forest

Management Projects undoubtedly sequester and store carbon, enhance biodiversity as well as conserve soil and water resources. At present, however, there is very limited information in the Philippines about rewards and rewarding approaches with reference to forest environmental services. This is particularly true in the case of carbon trading mechanisms. This article attempts to fill this information gap.

Rewarding environmental services

Rewarding – or as more commonly known – payment for environmental services (PES) is an emerging initiative in forestry and agroforestry development programs. For example, the program 'Rewarding the Upland Poor for their Environmental Services (RUPES)' explores new ways of addressing poverty (Van Noordwijk 2007). The goal of the program is to enhance livelihood and resource security for the upland poor in Asia, and maintain or enhance environmental functions (De los Angeles 2007). Opportunities exist for local farmers to maintain or restore local agro-ecosystem functions that protect watersheds, conserve biodiversity and sequester carbon. These include financial incentives and resource security that promote conservation. In addition, new market mechanisms that have the potential to reward the upland poor communities for effective and sustainable natural resources management, are emerging. These opportunities are supported by the global political commitment of halving poverty by 2015 (RUPES 2002).

RUPES trials are currently underway at the Kalahan Reserve in Luzon, the Philippines and Kulekhani watershed in Nepal (Chandler 2004). Other trials are being conducted in Bakun Reserve, an indigenous cultural community in northern Luzon, the Philippines as well as in Singkarak and Bungo, Indonesia (Van Noordwijk 2007). While there is no carbon trading

¹ These include the Integrated Social Forestry Program (ISFP), Upland Development Program (UDP), National Forestation Program (NFP), Forest Land Management Program (FLMP), Low Income Upland Communities Project (LIUCP), Community Forestry Program (CFP), Regional Resources Management Project (RRMP), Forestry Sector Project (FSP), and Community-Based Forest Management Program (CBFMP) (Harrison et al. 2005).

yet by the two trial sites in the Philippines, both are working towards this (Pindog and Rice 2007).

Carbon trading

Currently, the Philippines is implementing three World Bank-supported greenhouse gas (GHG) emission reduction projects. These include the watershed rehabilitation project of Laguna Lake focusing on reforestation and agroforestry, the Laguna de Bay watershed project focusing on methane emission reduction from waste management projects and the North Wind Bangui Bay project in the northern tip of Luzon focusing on carbon-free energy generation (www.carbonfinance.org 2007).

Potential opportunities exist for smallholders to increase their annual income through forestry carbon trading. Calderon (2002) pointed out that despite the uncertainties regarding the inclusion of carbon forestry projects under Clean Development Mechanism (CDM), many parties are already engaging in forestry carbon trading. While the price per ton of carbon varies, it is clear that substantial amounts of money are involved. In Australia, the Sydney Futures Exchange has already established a carbon credit trading market, and many carbon emitters are already buying credits from forest growers (AAS n.d. cited by Calderon 2002). In December 2006, the total Carbon Financial Instrument (CFI) volume traded on the Chicago Climate Exchange (CCX) platform was 10 272 400 metric tons (mt) of carbon dioxide while the European Climate Exchange traded 443 496 000 mt of carbon dioxide (CCX 2006).

Challenges

There are several reasons why carbon trading in the Philippines has not drawn much attention among smallholders. These are also challenges that need to be overcome and are described in some detail here.

1. Price stability and profitability of carbon

Carbon as a commodity will be in the form of carbon emission reduction certificates that will be traded between the buying and selling parties. The price will be determined through the interaction of the parties involved. For the sellers, the main consideration will be how much it would cost them to establish and maintain the carbon offset project, as well as the foregone values or opportunity costs. The buyers, on the other hand, would be interested to buy the carbon credits only if these are cheaper than the cost of reducing emissions at source (Calderon 2002). These market forces lead to instability of carbon price per tCO₂e. The CCX market 2006 report showed that the price of carbon ranged from \$1.75 to \$4.5 per tCO₂e. A farmer in Claveria, Misamis Oriental, Philippines can earn in 120 days PHP30 000 or \$640 per hectare from growing corn. This means that in a year, a farmer would generate \$1920 (assuming three croppings per annum). If one has a hectare of land planted with *Gmelina arboria* ten years ago with 400 stems having an average diameter of 25 cm and average height of 20 meters, he would have an income of \$3383.65 (assuming 45% of plant biomass is carbon with 15% carbon added from roots, leaves, branches and twigs at \$4.5 per tCO₂e).

But that return comes only after ten years of growing *Gmelina*. If the farmers in Claveria can earn more than five times per hectare from corn instead of *Gmelina* after ten years, it is no surprise why few have engaged in forest carbon trading. Besides, the risk of planting trees due to diseases, forest fires, and other anthropogenic factors (in view of the long gestation period) is very high. Mercado (2007) concluded that carbon trading would not be attractive to the rural poor unless a more profitable carbon trading mechanism could be established.

2. Complicated transactions and the need for intermediary body

Like in the Philippines, many people in Southeast Asian countries expect substantial financial returns from carbon after a multi-year investment in planting trees. But generating funds from forestry carbon projects through the Afforestation/Reforestation Clean Development Mechanism (AR-CDM) under the Kyoto Protocol is an enormous task. In most cases, smallholders alone cannot solely accomplish the required documents. In Vietnam, SNV (Netherlands Development Organization) as an intermediary organization is helping farmers obtain benefits from forestry carbon through the AR-CDM (Doets 2007). Their work now is in progress but despite their effort, many problems still exist including among others the inaccessibility and variability of spatial and land-use data necessary to develop an AR-CDM Project (Doets, Son and Tam 2006).

Such experiences provide a glimpse of the complicated processes required before benefits from forestry carbon project can be obtained. The presence of an intermediary agency officially designated by the government to support smallholders is crucial. In the Philippines, the Department of Environment and Natural Resources (DENR) could serve such a role since it has regional offices throughout the country that could assist smallholders to benefit from emerging carbon trading.

3. Absence of clear trading schemes

A clear and transparent carbon trading scheme specifying the quantification method, price per tCO₂e, payment scheme and harvesting modalities is necessary to attract the smallholders. If established, there would be greater flexibility on the part of smallholders to work towards AR-CDM projects or participate in carbon trading schemes. Profitable carbon trading could also result in increased supply of timber for the wood industry as there would be more people engaged in tree farming. Questions regarding carbon price, payment scheme, future utilization of mature trees, the need for designated regional markets where the harvested timber (that passed through carbon trading) could be sold still need to be resolved.

4. Small landholdings, land tenure and land ownership

Aggregating environmental services, particularly carbon, into saleable form from small-scale farms is beset by the issue of land ownership. While it is relatively easy to process

documents from a single, big land owner, it requires more effort to integrate varied aspirations and demands from the fragmented small-scale tree farm owners. This would likely discourage carbon buyers from negotiating with the small land holders unless a unified and smooth agreement can be achieved. Besides, many small-scale farmers may not actually own the land they are currently cultivating. The original owners would still dictate the land use, which might prevent the tenant's participation in any carbon trading scheme.

5. Natural calamities

The implementation of a clear and transparent carbon trading scheme in the Philippines is made more complicated by the frequent calamities (particularly typhoons) that have cost the country so much. Millions of dollars in damages to roads, bridges, and public buildings are incurred annually. Due to the prevalence of destructive typhoons, the Philippines National Disaster Coordinating Council must come up with a scheme to insure smallholder tree farms.

6. Long-term security and stakeholder participation

Many smallholders are rightly skeptical of poverty alleviation schemes promoted by the government. In the past, the Philippine government implemented several forestry initiatives geared toward eradicating poverty in the rural communities but their success has been marginal. Only when smallholders find that carbon trading truly provides long-term benefits to them will their participation in such schemes be assured.

7. Insufficient information dissemination

The Philippines is taking a major and innovative step into a new renewable energy era with the signing of the first GHG reduction purchase agreement (ERPA) for a wind farm project in the ASEAN Region, under the CDM of the Kyoto Protocol (www.carbonfinance.org 2007). The watershed rehabilitation project of Laguna de Bay is also a major and ground-breaking development in carbon trading in the Philippines with potential benefits for smallholders. However, information on these developments has not reached the majority of smallholders. There is still a need to disseminate such information so that necessary steps can be taken by the various stakeholders (including smallholders in the Visayas and Mindanao Islands) to obtain benefits from carbon trading under these and other projects.

Conclusion

Carbon trading is a potential means by which smallholders could enhance their revenue from small-scale tree farming and agroforestry systems. If the above challenges can be resolved, thereby providing a clear and transparent trading mechanism for carbon, smallholders engaged in tree farming are expected to benefit. Smallholders from selected sites in Leyte Province are already counting on the Philippine government and non-government organizations to help them play a greater role in carbon trading in the country.

The Philippine government intends to establish a PES program in the country. On 9 March 2007, the Philippine government conducted the National Multi-Sectoral Forum on 'Costing for Environmental Services: Implications to Policies' as a formal recognition of the PES program in policy formulation. However, implementing the programs articulated during that forum remains a great challenge. Although initial progress has been made (e.g. the three World Bank-supported projects), expanding the scope of projects to the national level is important.

The government has a clear role to play to ensure that the rural poor or smallholders generate financial benefits from these mechanisms, including establishing links between carbon buyers and seller, providing extension

services to tree farmers, etc. The successful implementation of a clear and beneficial carbon trading scheme in the country will not only provide benefits to smallholders but also widen the supply of timber for the wood industry.

References

- Aggangan, R.T. and Faylon, P.S. 2005. *Research and development priorities for smallholder forestry in the Philippines*. In: Proceedings from the End-of-project Workshop, Ormoc City, the Philippines, ACIAR Smallholder Forestry Project ASEM/2000/088, The University of Queensland, Gatton.
- Calderon, M.M. 2002. *Opportunities and challenges for a carbon market for the Philippine Forestry Sector*. Journal of Environmental Science and Management 4(1-2): 14-28.
- Capoor, K. and P. Ambrosi. 2007. *State and Trends of the Carbon Market 2007*. World Bank, Washington D.C.
- CCX (Chicago Climate Exchange) 2006. *CCX Market report*. Volume iii, No. 12. 190 South LaSalle Street, Suite 1100, Chicago.
- Chandler, F.J.C. 2004. *Making markets for forest communities: linking communities, markets, and conservation in the Asia-Pacific region – the RUPES project*. In: Proceedings of the Seoul Workshop on Forest for Poverty Reduction: Opportunities with Clean Development Mechanism, Environmental Services and Biodiversity.
- Chiong-Javier, M. 2001. *Local organizations in the upland natural resources management in the Philippines: country overview*. Paper presented to the SANREM Conference on Local Governance of Natural Resource Management in Southeast Asia, Manila, 28-30 May 2001.
- De Los Angeles, M. 2007. Personal communication. Environmental Economic Consultant, World Bank Institute, Washington D.C.
- Doets, C. 2007. Personal communication. Advisor, Collaborative Forest Management for SNV Netherlands Development Organization, Vietnam.
- Doets, C., Son, N.V. and Tam, L.V. 2006. *The Golden Forest-practical guidelines for AR-CDM project activities in Vietnam*. Hanoi, Vietnam.
- Emtage, N.F. and Suh, J. 2005. *Socio-economic factors affecting smallholder tree planting and management intentions in Leyte Province, the Philippines*. In: the Proceedings from the End-of-project Workshop, Ormoc City, the Philippines, ACIAR Smallholder Forestry Project ASEM/2000/088. The University of Queensland, Gatton.
- Harrison, S.R., Emtage, N.F. and Nasayao, B.E. 2005. *Past and present forestry support programs in the Philippines, and lessons for the future*. Small-scale Forest Economics, Management and Policy, 3(3): 303-317.
- IPPC (Intergovernmental Panel on Climate Change) 2007. *4th Assessment Report*. http://en.wikipedia.org/wiki/IPCC_Fourth_Assessment_Report. Referenced 23/04/07.
- Lean, G., Hinrichsen, D. and Markham A. 1990. *WWF Atlas of the Environment*. Prentice Hall, New York.
- Magcale-Macandog, D.B. 2000. *Status of the GHG inventory for the LUCF sector in the Philippines, Thailand, and Indonesia*. Proceedings of the IGES/NIES Workshop on GHG inventories for Asia-Pacific Region. Institute for Global Environmental Strategies, Japan.
- Mangaoang, E.O. 2002. *A forester's perspective of the socio-economic information requirements for forestry in Leyte*. In: Socio-Economic Research Methods in Forestry: A Training Manual Cooperative Research Centre for Tropical Rainforest Ecology and Management (Rainforest CRC), Cairns, Australia.
- Marasine, T.N. 2007. Personal communication. Researcher on Climate Change and Environmental Services, University of Southern Queensland, Toowoomba, Queensland.
- Mercado, A. Jr. 2007. Personal communication. Coordinator, World Agroforestry Centre, Mindanao, Philippines.
- Pasa, A.E. 2006. *Assessment of Environmental Services towards Rewarding a CBFM Project in Midwestern Leyte Province, the Philippines*. PhD Dissertation, College of Forestry and Natural Resources, University of the Philippines, Los Baños, Laguna.
- Pindog, M. and Rice, D. 2007. Personal communication. Coordinators, RUPES Kalahan, Sta. Fe, Nueva Viscaya, Philippines.
- RUPES. 2002. *Primer on Developing Mechanisms for Rewarding the Upland Poor in Asia for Environmental Services they Provide*. World Agroforestry Centre, Los Baños, Laguna, the Philippines.
- Van Noordwijk, M. 2007. Personal communication. ICRAF Regional Coordinator for Southeast Asia, Bogor, Indonesia.
- www.carbonfinance.org. 2007. *World Bank-supported GHG emission reduction projects in the Philippines*. Referenced 05/09/07.