

Payments or rewards? Farmers

benefit

by providing environmental

More and more land in Africa is being cultivated, reducing the area covered by forests, the existing biodiversity, and affecting the water supplies of nearby cities. Could farmers produce the same services as forests do – at least partly? The World Agroforestry Centre is working to develop arrangements between farmers and private parties in a bid to have farmland supply clean water and carbon sinks. But what should farmers get in return? Money is not the only reward they are looking for.

Text and photo: Godfrey Mwaloma

For several decades, forests and grazing lands in Africa have continued to deteriorate, and rural communities have taken the blame for cutting down trees and overusing common land. But since the 1950s governments and the global conservation movement have deliberately excluded

farmers from this resource, taking over control of forests and establishing parks or government-managed forest reserves. Farmers thus lost their feeling of ownership, while their numbers grew and the forests and communal lands were not fully protected. The result is that, today, large areas of previously forested land have been lost. Forested watersheds where biodiversity thrived and which provided clean water, fuel and timber in abundance have now dwindled. Can farmers provide environmental services (such as habitats for wildlife, carbon sequestration, climate regulation or the regulation of water flows and quality) in addition to producing food? Around big cities in Africa the situation is particularly precarious. But the rural communities who have been blamed for most of the degradation are best placed to become wardens of the environment. So far, farmers in Africa have rarely been rewarded for their environmental services. Some live next to hydroelectric power plants that utilise water from their land and yet they are not provided with electricity. These farmers continue to use wood for their fuel, and hence continue to degrade forest ecosystems.

Agroforestry is uniquely suited to improving food and fuel security, while sustainably managing agricultural landscapes so they continue to provide essential ecosystem services. But how do we get more farmers to adopt agroforestry and other suitable land use practices that secure the continued provision of these environmental services?

Experimenting with rewards The World Agroforestry Centre (ICRAF) is conducting research on the ways to promote more productive, diversified, integrated and intensified agroforestry systems that provide livelihood and environmental benefits. ICRAF is working with the International Fund for Agricultural Development (IFAD) in a research programme aimed at building knowledge about the necessary rewards for environmental services. This programme is called “Pro-poor Rewards for Environmental Services in Africa” (PRESA), and is linked with local research and farmers’ groups to identify and establish those arrangements that bring multiple benefits. The programme is working in seven sites (three core and four associate sites) in the highlands of East and West Africa, where there is immense pressure from growing human populations and demand for increased food production. PRESA does not consider rewards for environmental services

services

solely in terms of monetary compensation, but has adopted a broader perspective (see box on page 26). A first condition is that those who need the environmental service recognise the importance of rewarding the one who provides it. As a market-based mechanism, with buyers and sellers, rewards

for environmental services must involve establishing a correct price. Price setting is difficult because the market for environmental services is neither open, nor transparent. With little data from related markets it is often difficult to determine a market price. Moreover, buyers cannot choose their suppliers. For example, a water scheme has to make a deal with a particular group of farmers – it cannot look for another (cheaper) group outside the catchment area of their water source. So buyers and suppliers need to strike a deal – which can easily result in dissatisfaction or conflict.

Auctioning services A pilot programme in Malawi where farmers get cash payments for growing trees could provide useful lessons in price setting. A study by ICRAF researchers in 2008 examined two different approaches to setting prices and allocating environmental service contracts: an auction and a fixed price offer.

An initial survey identified 27 villages with 538 households. A total of 467 people were registered as eligible for the contracts and divided into two equally-sized groups. The first group was exposed to the “auction” method. Individuals made bids on how much money they would require to allocate half an acre of their farms to trees. The bid cards were collected and the data analysed. Naturally, there were both high and low bids, varying from 100 Malawi kwacha (€ 0.46) to almost 1 million kwacha!

The second group was exposed to a “fixed price” method. The data from the “auction” was used to set a realistic price, considering everyone’s opinion and the available budget. This was offered to the second group as a fixed price: 12,000 kwacha (circa € 55) per half an acre. Over 90 percent of those in the second group agreed to this price. This exercise is expected to avoid any potential conflicts, as it has transparently set a clearing price mechanism that was offered to anyone interested in a contract.

Pricing water quality In Kenya, the Sasumua watershed supplies Nairobi with almost 20 percent of its water needs. Most of the rivers feeding the Sasumua Dam flow through intensively cultivated areas, where land use decisions have a great impact on downstream water flows and quality. Over the last few years, the area has seen a clash of interests between water authorities and local communities. A fair reward system might help to create a win-win situation. In such a situation, what level of rewards would be fair to both parties? The project first sought to understand how agricultural best practices, such as contour grass strips, contour farming and agroforestry, affect the quality and regime of water flowing into the reservoir and treatment plant. The project also determined sediment levels and the cost of purifying water under



different land management scenarios. A cost-benefit analysis of conservation practices and savings allowed land owners and the Nairobi Water Company to make a decision on how to set a reward scheme, and on whether to participate in it or not.

The Sasumua Water Resources User Association, a local group for the equitable allocation of water rights, says that its members are more interested in obtaining assistance to implement land conservation measures than in cash payments. They want the Nairobi Water Company to help them to establish rain water harvesting technologies.

Mixed rewards The role of agriculture and forestry in carbon sequestration to mitigate global climate change is well documented, but it is difficult to price carbon or find ways so that communities benefit from this exercise. Ecotrust Uganda, an

What kind of rewards?

Rewarding communities for environmental services can provide powerful incentives and efficient mechanisms for conservation, while also offering new sources of income to support rural livelihoods. Rewards can come in different forms. The best known system is that of “Payments for Environmental Services” or PES, which make direct payments to farmers. Examples are direct deals between water and hydropower utilities and communities living in catchment areas, and payments for carbon sequestration. The latter involves global systems of trade in terms of carbon credits. Other rewards create opportunities for economic benefits for farmers. They include the use of certificates and labels in order to access a better market, community-based eco-tourism, conditional tenure rights in areas where land and resource ownership is communal, or specific rights to harvest and sell tree products from public land. Other types of rewards are the support to livelihood conditions for farmers. The service “buyer” provides infrastructure – schools, roads or water holes – in exchange for more environment-friendly farming. Building the capacity of farmers is another possible reward: better management of degraded ecosystems can restore the productivity of land and provide local communities with food and fuel.

In all cases a major issue is the monitoring of the services as well as the level of the reward provided. Who measures the services, how is the reward level set, how are rewards delivered, and how can you make sure that farmers actually get the reward they earned?

organisation that is developing environment conservation financing, is working in a carbon sequestration scheme with small-scale farmers. The scheme prepares a contract with individual farmers with targets for establishing trees.

Farmers who achieve the targets are issued carbon payments of 632 euros for establishing and maintaining one hectare of woodlot. The payments come from local and multinational corporations interested in carbon credits, such as Tetra Pak, Camco, Nedbank and African Safaris. The majority of farmers participating have between one-half and two hectares, resulting in payments ranging from € 316 to € 1,264. This total is paid in five instalments over a ten-year period, provided that producers continue meeting certain “milestones”. Apart from providing additional income, the trees protect soils from erosion while providing shade, medicine, fruit, wood fuel and construction materials.

When carbon payments are distributed to each individual farmer, the amount often doesn't justify the effort. So most carbon projects (and other PES projects) in the region tend to focus on collective benefits to a community, for example, roads, schools, access to markets, access to farm inputs, etc. One way to optimise the benefits for individual farmers is to initiate nature-based enterprises through “eco-labelling” schemes. Such a label provides products such as honey, baskets and fruits with better access to global markets and relatively higher prices. Eco-labelling can become an important extra source of income for farmers and contributes to sustainable carbon binding.

Policy solutions Policy makers have grappled with the dilemmas of livelihoods and conservation for decades, and they welcome the arrival of schemes that offer practical solutions. Farmers can be convinced of the merits of sustainable land use management if such schemes consider the costs in terms of lost income opportunities, or the costs of implementing land management technologies. Rewards for environmental services offer an obvious compromise between livelihoods and conservation. There is no denying that there is much to learn on how to establish efficient and sustainable mechanisms to reward communities for sustainable land use and to ensure that buyers of environmental services can be sure that they get value for their money. But in the long-term it is the only solution to overcome further degradation of the rural environment in Africa.

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