

Agriculture is Not a Carbon Commodity

By Lim Li Ching and Doreen Stabinsky

Agriculture is the most important sector in many developing countries. It is central to the survival of hundreds of millions of people in most parts of the developing world.

Agriculture, first and foremost, is about livelihoods

In most developing countries, agriculture, which provides the bulk of employment, is not a commercial activity per se, but a way of life. Most agriculture production in these countries involves small land holdings, mainly producing for self-consumption. Women are the key agricultural producers and providers. Hence agriculture is critical for food and livelihood security, and for the approximately 500 million smallholder households, totaling 1.5 billion people, living on two hectares of land or less.¹ Smallholdings account for 85 percent of the world's farms.

Agriculture is also deeply connected with issues of development and poverty alleviation, as about 75 percent of the world's poor live in rural areas where agriculture is the main economic activity.² Paradoxically, women, despite playing a crucial role in agricultural production, make up over 60 percent of the hungry.³ The World Bank has warned that the agriculture sector must be placed at the center of the development agenda if the Millennium Development Goals of halving extreme poverty and hunger by 2015 are to be realized.⁴ For the poorest

people, GDP growth originating in agriculture is about four times more effective in reducing poverty than that originating outside the sector. The large share of agriculture in poorer economies suggests that strong growth in agriculture is critical for fostering rural development and overall economic growth.

The UN Special Rapporteur on the Right to Food has highlighted the need to support smallholder farmers and means of agricultural production that are sustainable, particularly in the context of climate change.⁵ This is because agricultural science and technology, and related investments, have hitherto mainly benefited large-scale enterprises and have not focused on the specific needs of the rural poor in developing countries.

In particular, women are the primary agricultural producers in many developing countries and play a major role in securing household food security, thereby requiring special attention.

Small-scale ecological farming is key to world food security

Despite the general neglect of agriculture – both in terms of policy and development assistance – and the marginalization of the needs of smallholder farmers in developing countries, they are key to the world's food security. For example, in Latin America, about 17 million smallholdings occupying 34.5 percent of the total cultivated land with average farm sizes of about 1.8 hectares, produce 51 percent of the maize, 77 percent of the beans and 61 percent of the potatoes for domestic consumption.⁶ Similar data are evident

¹ Report of the Special Rapporteur on the right to food, Olivier De Schutter. 2008. Building resilience: A human rights framework for world food and nutrition security. Report to the UN General Assembly (A/HRC/9/23).

² Submission to the World Trade Organization by the G-33. 2010. Refocusing discussions on the Special Safeguard Mechanism (SSM): Outstanding issues and concerns on its design and structure. 28 January 2010. (WTO, TN/AG/GEN/30).

³ Hunger stats, World Food Programme
<http://www.wfp.org/hunger/stats>

⁴ World Development Report 2008: Agriculture for

Development. World Bank, Washington, DC.

⁵ Address by the UN Special Rapporteur on the Right to Food, High-Level Conference on World Food Security: The Challenges of Climate Change and Bioenergy, Rome, 3-5 June 2008.

⁶ Altieri. M.A. 2008. Small farms as a planetary ecological asset: Five key reasons why we should support the revitalization of small farms in the global South. TWN

from Asia, where the majority of the more than 200 million rice farmers, each cultivating around two hectares of rice, make up the bulk of the rice produced by Asian small farmers. In Africa, which has approximately 33 million small farms, representing 80 percent of all farms in the region, the majority of African farmers (many of them women) are smallholders and produce a significant amount of basic food crops.

The diversified farming systems of smallholders in developing countries are more productive than large farms if total output is considered rather than yield from a single crop. A salient feature of these farms is their high degree of biodiversity, in the form of polycultures and/or agroforestry patterns, which are endowed with a variety of organisms that perform various beneficial ecological functions.⁷ These include nutrient-enriching plants, insect predators, pollinators, nitrogen-fixing and nitrogen-decomposing bacteria.

This biodiversity is also crucial to ensuring agricultural resilience, which is needed for the adaptation efforts by developing country farmers, who will suffer disproportionately more from the effects of climate change. Agrobiodiversity allows farms to mimic natural ecological processes, enabling them to better respond to change and reduce risk. Thus, farmers who increase interspecific diversity suffer less damage during adverse weather events, compared to conventional farmers planting monocultures.⁸ Moreover, the use of intraspecific diversity (different cultivars of the same crop) is insurance against future environmental change. Diverse agroecosystems can also adapt to new pests or increased pest numbers.

Women play an important role in managing biodiversity and in adapting to climate change. For example, women from many indigenous communities possess repertoires of “coping strategies” that they have traditionally used to manage climate variability. In Rwanda, women are reported to produce more than 600 varieties of beans, and in Peru, Aguaruna women plant more than 60 varieties of manioc⁹.

At the same time, smallholder farmers in developing countries usually treat their soil with organic compost and green manures, practices that sequester carbon into the soil. They also rely on organic

manures, legume-based rotations and beneficial insect diversity, which allows them to reduce or even forego synthetic fertilizer and pesticide use, hence contributing to climate mitigation. This is in sharp contrast to the industrialized, fossil fuel- and energy-intensive agriculture that characterizes much of developed country agriculture, and for which serious domestic mitigation actions are necessary.

Soil carbon should not be turned into a commodity

In the search to commodify every last corner of the planet, and indeed the atmosphere, carbon traders and marketers are developing methods to create a commodity out of the carbon found in soil. To them, this was likely a logical extension of their markets, which already exist for the carbon embodied in trees.

The idea is fairly simple in concept and complicated in practice: quantify the amount of carbon in agricultural soils. When farmers adopt certain crop management practices that will increase the amount of soil carbon, they receive payment for the amount of carbon they are able to sequester in the soil. Those carbon credits purchased as “offsets” can then replace developed country mitigation obligations, or they can be traded as commodities on the speculative market.

There is no doubt that particular crop management practices warrant financial support, for example, those ecological agricultural practices of small-scale farmers described above that are essential to building resilience of cropping systems, such as the incorporation of composts, manure, cover cropping, and crop rotation. It is true that compost and manure ARE the source of the carbon that becomes sequestered in soils. But creating a commodity out of soil carbon is an inappropriate means to provide support to small-scale farmers for their climate-resilient practices.

Offsets and carbon markets help developed countries evade responsibilities and obligations and threaten food security and livelihoods

Developed countries have legal obligations, set out under the UN Framework Convention on Climate Change (UNFCCC), to provide financial resources for adaptation efforts:

The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects. (UNFCCC, Article 4.4)

Developed countries are looking for means to escape these public financial obligations, through promoting “innovative” sources of financing *and* by transferring the focus of attention from adaptation to mitigation.

Environment and Development Series 7. Third World Network, Penang.

⁷ Altieri, M.A. 2008. Ibid.

⁸ Altieri, M.A. and Koohafkan, P. 2008. Enduring farms: Climate change, smallholders and traditional farming communities, TWN Environment and Development Series 6. Third World Network, Penang.

⁹ CBD. 2009. Biodiversity, gender and climate change. Convention on Biological Diversity, Montreal.

<http://www.cbd.int/climate/doc/biodiversity-gender-climate-change-en.pdf>

Among these innovations in escaping legal and moral obligations is the use of offset projects in the developing world: by paying for mitigation practices in the global South, developed countries can avoid their own reduction commitments, thus continuing their unsustainable production and consumption patterns, rather than make the transition to low-carbon lifestyles. This increases both the adaptation and mitigation burdens of developing countries, when their priorities are poverty eradication and development.

Carbon credits generated in this manner could be subsequently traded on a global carbon market, ostensibly to generate money for climate financing. However such markets, with their inherent instability, combined with the complexity of agriculture markets, could mean disaster for food security and livelihoods in developing countries.

Soil carbon credits are unlikely to reflect actual carbon sequestration

Promoters make it seem as if there is easy money for the earning in the soil carbon market. However, many hurdles stand in the way of creating a market for soil carbon.

Quantifying the amount of carbon in the soil is not a straightforward technical matter. Baselines must be established – how much carbon existed in the soil prior to the introduction of particular practices? And fluxes of soil carbon must be understood – how do soil carbon concentrations vary according to seasons or as surface temperatures warm due to climate change?

Offset credits are much more valuable if the mitigation practice can permanently sequester a known amount of commodified carbon. Because this is impossible in the case of soil carbon, elaborate accounting systems are constructed to discount the amount of soil carbon that might be sequestered to take into account both impermanence and problems of measurement. This difficulty in accounting could also allow developed countries to account for emission reductions when in fact these reductions have not occurred, or are less than what is accounted for.

To create marketable soil carbon, farmers are aggregated into large groups and contracts are signed. The contracts state that farmers will follow a series of prescribed practices. Those practices most commonly have been low-till or no-till weed control practices. Practices associated with the greatest increase in soil carbon – the addition of compost and manures that actually ADD carbon to soil¹⁰ – are actually not required. The actual carbon

sequestered in current schemes is negligible, providing little to no compensation for farmers who have undertaken these practices and ensuring that carbon credits generated are worth a fraction of other carbon being traded on markets.¹¹ What results at the end is a marketable commodity that is worth little more than the piece of paper it is printed on.

Soil carbon in the CDM?

Proponents of commodifying soil carbon are looking eagerly to rewrite the rules of the Clean Development Mechanism (CDM) to expand eligibility to soil carbon sequestration mitigation projects. At the very least this is a dangerous distraction from the more urgent needs of agricultural adaptation. At its worst, this is a fundamental shirking of responsibility of the developed world to undertake mitigation domestically, in economies that still massively over-occupy the remaining atmospheric space, and a shirking of responsibility to provide public financing for the enormous adaptation needs facing the poorest and most vulnerable agriculturalists on the planet.

The centrality of adaptation¹²

The end of creating an agriculture that is climate-resilient is very distinct from the end of creating a marketable commodity. This is the essential unresolvable conflict in promoting a market for soil carbon, based on “mitigation” practices adopted by farmers in the developing world. Farmers in the developing world must receive support for their adaptation efforts. The support must be provided without constraint or caveat. Tying adaptation support to the exigencies of a carbon market is not only illogical, but given the severity of the climate crisis, it is immoral.

Agriculture is central to developing countries, as are the millions of smallholder farmers and women who provide the food we depend on, nurture biodiversity, and provide practical, just and affordable solutions to the problem of climate change. They should not be treated as commodities.

¹⁰ Howitt, R.E., R. Català-Luque, S. De Gryze, S. Wicks, J. Six. 2009. Realistic payments could encourage farmers to adopt practices that sequester carbon. *California Agriculture* 63(2): 91-95.

¹¹ Prices for soil carbon on the Chicago Climate Exchange have ranged from \$5 a ton to \$0.15 per ton. “Soil carbon market is of ‘little value’ to farmers.” *Carbon Offsets Daily*, August 19, 2010. <http://bit.ly/9DHQY>

¹² Campbell, B. 2009. Beyond Copenhagen: REDD+, agriculture, adaptation strategies and poverty. *Global Environmental Change* 19: 397-399.