EDITORIAL

Carbon Trading in the Agriculture, Forest, and Land Use Sectors

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It is now evident that the progress of climate mitigation in the fossil fuel use-based sectors of economies across the world has been unconscionably slow. Given this context, the agriculture, forest, and land use (AFOLU) sector is now being considered the main arena of climate change mitigation (as opposed to climate change adaptation).

But how is this shift to mitigation in the AFOLU sector of the global South sought to be implemented? The promotion of mitigation in the global South thus far has largely been by means of climate finance from the global North. Under the terms of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, climate finance was to be provided in the form of grants and concessional loans. In practice, however, climate finance has mainly taken the form of non-concessional credit on a project-wise basis. The amount of credit actually given and the terms on which it has been disbursed have fallen short, both of Northern commitments and of Southern expectations.

The current drive is to finance mitigation in the developing world through carbon pricing, on the lines of policies in the OECD countries, where domestic mitigation policy has, for several decades, focussed on limiting emissions by putting a price on them.

Carbon-pricing mechanisms can take the form of carbon taxes and of trading in allowances that permit emissions by notified entities up to a specified amount. Those whose emissions exceed their allowances may then make up the shortfall by buying them at a market-determined price from those who have surplus allowances. Developed-country governments now regard this kind of trading – that is, to reduce emissions in a manner that is "cost-effective" and "efficient" – as the most important direct measure to reduce emissions.

A variant of carbon trading that is of particular interest to the AFOLU sector of the global South is carbon offsets. Carbon offsets (or carbon credits) are certificates of emissions reduction that are provided to a party that voluntarily undertakes verifiable measures to reduce emissions, these measures being expected to be permanent or to continue for a long term, typically decades. Such emissions reduction must be proved to be additional, that is, to be reduction for which the infrastructure would not have been available without the provision of carbon credits. These carbon credits can then be sold to those who wish to contribute to emissions reduction, either to comply with their country regulations or to contribute voluntarily to emissions reduction. The latter is the case with many large multinational firms that pledge to reduce their carbon emissions or even reach net zero in the future.

What impact will the promotion of carbon credits have on agriculture and food security in developing countries and on the livelihoods of their small producers?

Global commodity and input markets are stacked against developing countries and against the small and marginal farmers who constitute a large proportion of the producers in these countries. In the domestic arena too, input and commodity markets do not favour the small producer. That carbon markets would be an exception to such inequality of impact seems very unlikely. On the contrary, all evidence points to the difficulties that farmers, especially small farmers, would face with respect to carbon markets. Such difficulties have much to do with the particular nature of these new markets.

Given the initial investment required to meet the onerous transactional costs of obtaining carbon credits, farmers, rural communities, and their organisations cannot, typically, obtain carbon credits directly. In most cases, third-party entities engage with farmers and rural communities to promote mitigation activities, bearing the costs of undertaking them. In return, communities transfer their rights to carbon credits to these third parties, who then sell them on voluntary carbon markets or even the compliance carbon markets of developed countries. Though these third parties claim that they bear the risk arising from the volatility of the price of carbon credits, in practice, the returns can far outweigh the modest payment or investment that they have made in rural communities in developing countries.

Such arrangements to limit emissions or sequester carbon impose substantial restrictions on the autonomy of producers in their farming activities. Whether it is, for example, changing agronomic practices that reduce emissions or sequestering carbon by planting trees on field bunds, farmers must abide by their commitment for long periods, over decades (commitment periods extend to as much as a hundred years in some projects), in order to obtain the payments due to them. It is possible, in theory, that communities get a substantial part of the revenue from the sale of

carbon credits. But the experience of the Clean Development Mechanism (CDM) under the Kyoto Protocol and the voluntary carbon markets suggest otherwise. And even where new carbon offset projects claim that they have effective provisions to provide fair benefit-sharing to communities, details are obscure and difficult to verify.

At present, crop options for farmers that are compatible with mitigation objectives are often options that do not meet other policy objectives, such as those of increasing agricultural productivity and improving farmers' incomes. Policies that compromise food production (and, for some countries, food sovereignty) and the incomes of the vast numbers of poor farmers in the world are, in a word, unacceptable.

Modelling studies on future mitigation pathways in the AFOLU sector show that mitigation that affects land use can have a serious impact on food security. In fact, there are scenarios in which mitigation measures to limit global temperature rise to 1.5 °C above pre-industrial levels that include land-use based methods *actually cause an increase in the number of people at risk of hunger*, reversing current trends with respect to the mitigation of hunger itself.

Much of the literature on carbon trading in agriculture also fails to account for the potential productivity losses due to warming itself and the consequent adaptation required. Adaptation to the impact of climate change on agriculture and the potential for mitigation and carbon trading in agriculture are largely discussed separately, and there is little or no discussion on how both objectives are to be pursued simultaneously and of their sustainability in the medium to long term.

Developing a full-fledged emissions allowance and trading regime in the AFOLU sector, especially agriculture, is even more challenging, and indeed no developed country has brought agriculture into the ambit of emissions trading. The very few carbon trading and carbon offset schemes in operation in agriculture suggest a greater need to rely on ex-ante studies on the potential impact of carbon trading on agriculture. However, even a cursory survey of the literature suggests that carbon pricing and its implementation in agriculture would have a regressive impact that is likely to be felt most by the bottom deciles of farmers across the country.

Considerable enthusiasm is being expressed in India for the introduction of carbon trading, particularly from the corporate and financial sectors, with much discussion in the financial media of its potential. They have shown particular interest in carbon offsets in the AFOLU sector, while echoing uncritically much of the policy discourse from their counterparts in the global North. The Government of India, though, seems to be displaying some degree of caution, as demonstrated by its stop-go attitude to drafting a detailed legislative and administrative framework for carbon trading.

The Ministry of Agriculture and Farmers' Welfare has declared its interest in promoting the voluntary carbon market in agriculture for carbon credits. The bulk of the registered projects from India dealing with the AFOLU sector, in the Verra database, the world's largest registry of voluntary carbon credits, deal with agroforestry or forestry.

The evidence thus far – from voluntary carbon markets, the CDM experience under the Kyoto Protocol, and ex-ante studies of the impact of carbon pricing – suggests that there is no reason to rush the introduction of carbon trading in agriculture in India.