BOOK REVIEW

Biofuels, Smallholder Agriculture, and Food Security

V. Sridhar*

Report of the High Level Panel of Experts (HLPE) on Food Security and Nutrition, United Nations Committee on World Food Security, Rome, June 2013. HLPE Report 5, *Biofuels and Food Security*, June 2013. HLPE Report 6, *Investing in Smallholder Agriculture and Food Security*, July 2013.

The two volumes under review are part of the continuing exploration of a variety of issues affecting global food security by the High Level Panel of Experts (HLPE) on Food Security and Nutrition. The HLPE was established by the United Nations Committee on World Food Security in 2010. Report 5 focuses on the impact of the biofuel "revolution" on food security, and Report 6 deals with the factors constraining investments in smallholder agriculture and their impact on food security.

The year 2008, when global food prices increased sharply, was also marked by the sharpest increase ever in global biofuel output. The worldwide production of biofuels increased from a little over 60 billion litres in 2007 to more than 80 billion litres in that year. By 2011, output had crossed the 100 billion-litre mark. The emergence of biofuels as a hedge against high and volatile petroleum prices is well known. But what has been the impact of public policies that promote biofuels – through subsidies, tax incentives, and mandates such as those by national governments stipulating the blending of these non-traditional fuels with petroleum products – on food security? This is the theme that is explored in Report 5 of the HLPE.

Although biofuels were used in the United States during the First and Second World Wars, it was not until the two major oil crises in the 1970s that the modern era in biofuels unfolded, in that country and in Brazil. While corn and maize were the main feedstock in the US, Brazil used its status as a premier sugarcane producer to divert output for its ethanol-blending programme.

* Deputy Editor, *The Hindu*, vsridhar.thehindu@gmail.com.

> In both cases, this was done taking advantage of existing agricultural production capacities when low commodity prices encouraged the search for alternative outlets. Broader strategic goals were also central, such as reducing levels of dependence on energy imports and, especially in the case of Brazil, improving the balance of payments at a time of high oil import bills. (HLPE, Report 5, p. 12)

The impact of the use of incentives and regulations to motivate the production of biofuels in the two countries remained largely confined to their national boundaries until the early 2000s. The Report observes that the formulation of the European Union's biofuel policy transformed the nature of global biofuel production in two fundamental ways. First, the dominance of diesel in the fuel-mix of the European automobile population led to a growing emphasis on biodiesel, which meant a shift away from cereal- or beet-based feedstock. But even more critically, the European Union's targets as stipulated in its biofuel policy required that biofuels be obtained from overseas, since its own biomass would have been inadequate. Thus began a quest for obtaining feedstock and biofuels from a globalised arena, a quest that has had a significant impact on agriculture in developing countries. As the Report points out, Latin American and Asian countries currently dominate these flows.

Report 5 observes that more than 50 countries now have a national biofuel policy, and that many developing countries (including India, China, and South Africa) are trying to balance the promotion of biofuels with the objective of ensuring that food security is not compromised. This means ensuring that food crops are not used for producing biofuels, but more importantly, ensuring that land that is currently used for producing food is not diverted to biofuel crops.

An interesting feature of the Report is the recounting of how biofuel strategies in China adapted to changed priorities, especially in order to protect food-security objectives. In 2000, China launched its biofuels promotion policy, aimed at curtailing its dependence on imported crude oil, which, at that time, accounted for more than half its national requirement. In line with this objective, the country set itself a production target of 12 billion litres of biofuel – comprising 10 million litres of ethanol and 2 billion litres of biodiesel. However, this meant that the ethanol output, accounting for about 14 per cent of national gasoline consumption, would use about one-fifth of China's corn and maize output – or about 6.6 per cent of cereal output (in 2009). Taking into account the obvious impact this would have on food security, the Development Program for Renewable Energy decided, in 2006–07, against using cereals for biofuels.

> Biofuel must not compete with grain over land, it must not compete with food that consumers demand, it must not compete with feed for livestock and it must not inflict harm on the environment. (*ibid.*, p. 33)

China's biofuel strategy now hinges on using sweet potato, cassava, and sweet sorghum for producing biofuels. Although the food security angle remains germane

even within the new policy framework, the point is that national governments need to be flexible in terms of trade-offs between food security and energy security objectives.

The Report points out that the Indian experiment of providing incentives for planting jatropha in "marginal" lands has been a failure. In 2003, the Government of India's objective was to plant jatropha in about 11.2–13.4 million hectares by 2012. This was part of its aim of achieving a 20 per cent biofuel blend. However, by 2010, only 0.5 million hectares had been planted, with a large proportion of the crop way short of the harvesting stage (*ibid.*, p. 34).

The Report observes that biofuels played an important role in the short-term spikes in food prices that have occurred since 2004 (*ibid.*, p. 14). Although the extent of correlation between higher food prices and the growing demand for biofuels is still in dispute, the widening demand–supply gap for biofuels and high oil prices continue to exert an upward pressure on food prices.

One aspect of the global oil market that could have a major role in determining biofuel prices, and therefore food prices, is the growing importance of speculation in the global oil trade. Oil, like many other commodities, now attracts the interest and attention of major global hedge funds and private equity funds. The speculative moves of such investors not only impart a greater volatility to oil prices, but also threaten to ensure the transmission of such volatility to biofuel and food prices.

Addressing the core issue of land use for growing biofuel crops, Report 5 says that the diversion necessarily results in competition with other possible use of land – not only for agriculture but a range of other purposes, including mitigating the effects of climate change, because it is positioned as a substitute for traditional fossil fuels.

The increasing demand for biofuel production places it in competition with other uses for land resources. Thus, land that has been used for "other economic activities," including urbanisation, and land reserved for "environmental objectives," such as the protection of biodiversity and carbon sequestration, are increasingly in danger of being diverted for producing biofuels (*ibid.*, p. 15).

The Report frames three questions, which, it says, will determine the nature and extent of the impact of land use changes on food security (*ibid.*, p. 77). First, how far is land availability a constraint on biofuel development and food security? Secondly, how much of the "large-scale land acquisitions" in recent years has been for biofuel production? Thirdly, how far have land-use changes that were supposed to mitigate the effects of climate change jeopardised food security?

The Report makes the interesting point that a purely agronomic definition of land availability can often hide other dimensions of land availability.

> Apparently underutilised land may be integrated into traditional forms of land use, ranging from itinerant pasturing, to fallow lands, to land used for energy, complementary foods and raw material for a variety of non-food activities.

Report 6 of the HLPE starts with the observation that the nature of the term "smallholder" not only varies across the world, but also changes as a society transforms. Fundamentally, however, a smallholder peasant is small primarily because he or she has limited access to scarce resources such as land. To surmount the problem of a limited availability of resources, the smallholder peasant, typically deploying family labour, needs to make investments in order to achieve a sustainable livelihood (HLPE, Report 6, p. 10).

Off-farm activities are critical for smallholders because they offer an avenue by which to diversify risk (*ibid.*, p. 11). The Report observes that most investments by smallholders are in the form of "labour investments to enlarge and improve the resource base" (*ibid.*). The decline in public investments has placed the onus for investment on smallholders themselves. However, their ability to invest is curtailed by the priority that must be given to education, health and food.

> Public investments in and for agriculture have fallen considerably since the 1980s. It is now widely recognized that agriculture has been neglected at both the national and international levels. Many agricultural banks (mostly linked to, and supported by, the state) have disappeared, and extension services, applied research and investment in infrastructure projects have declined since the mid-1980s. (*Ibid.*, p. 13)

The shift in emphasis has resulted in national governments tending to favour large enterprises that export agro-based products. Report 6 suggests that by improving smallholders' access to natural assets, especially common property resources, and by enabling their access to productive assets, state institutions could set such holdings on a path of long-term economic viability. Once this is done, smallholders may be able to "improve efficiency and outcomes without even increasing (their) holding size" (*ibid.*, p. 14).

"Contract farming," the Report observes, "cannot be a miracle solution to problems smallholders are facing, or applicable to all smallholders in the world." Contract farming needs to be made an "inclusive, fair and transparent process for smallholders." Improved access to credit and collective investment in collective assets aimed at improved market access for smallholders are important for enhancing the competitiveness of smallholders.

The Report urges national governments to design medium- and long-term National Smallholder Investment Strategies that are "grounded in participatory processes" (*ibid.*, p. 16). These strategies ought to provide smallholders with greater access to assets – natural assets such as land and water, human assets such as affordable health

care and education, and financial assets such as banking and other financial services, at an affordable cost (*ibid.*, p. 89).

The reports that have at present been published by the High Level Panel of Experts appointed by the Food and Agriculture Organisation of the United Nations have made significant contributions to the analysis of international dimensions of problems of food security and nutrition. They also provide very useful source material for policy-makers, scholars, and others concerned with this important field.