Biofuel Expansion: Challenges, Risks and Opportunities for Rural Poor People

How the poor can benefit from this emerging opportunity

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Prepared by: Vineet Raswant, Nancy Hart and Monica Romano

Food versus fuel: Can the agriculture sector meet biofuel demand without compromising food security? Farmers might benefit from high commodity prices but what about net purchasers of food?

Climate change and environment: How effective are biofuels in mitigating climate change? Are we using the right yardstick to determine the amount of energy required to produce biofuels in developing countries where farmers are less likely to use nitrogen fertilizers and practice mechanized farming?

Land use and tenure security: Will the increase in biofuel demand increase land use competition between food and fuel crops and result in tenure insecurity for small farmers?

Impact on poverty alleviation: How does biofuel development affect the food security, energy needs and employment opportunities of poor rural people?

INTRODUCTION

On 2 January 2008, the cost of crude oil crossed US$100 a barrel for the first time, raising global concerns. Continuing near-record oil prices, fears of unaffordable and rapidly depleting sources of fossil fuel and the desire to achieve energy security and mitigate climate change have combined to heighten interest in biofuel production as a cost-effective, alternative source of energy.

Many governments have developed policies meant to promote affordable, alternative energy sources capable of maintaining current energy consumption standards, supporting further economic growth and reducing oil dependency. In addition to producing energy from solar, wind, nuclear and marine sources, the policies also aim at producing biofuels to meet the ever expanding demand of the transportation sector, mainly bio-ethanol from grains, and bio-diesel from vegetable oils and animal fat.

In 2006, bio-ethanol production was around 40 billion litres globally with 90 percent produced in Brazil and the United States, and bio-diesel production was more than 6 billion litres with 75 percent produced in the EU – mainly in France and Germany. Brazil, the most competitive producer with the longest history of bio-ethanol production, uses about half its sugarcane to produce bio-ethanol.

Spurred by many of the same considerations as the developed countries, many developing countries are now launching biofuel programmes based on agricultural feedstocks: bio-diesel from palm oil in Indonesia and Malaysia as well as from oil-rich, inedible plants such as jatropha and pongamia in India; and bio-ethanol from sugarcane in Mozambique and in several Latin American countries, such as Honduras, Nicaragua and Panama.

Although assessments of the global economic potential of biofuels have just begun, current biofuel policies could, according to some estimates, lead to a fivefold increase of the share of biofuels in global transport energy consumption – from just over 1 percent today to 5 to 6 percent by 2020.[1] With increasing demand for biofuels, considerable land could be diverted from food to feedstock production. FAO estimates that the amount of land that would be used for the development of biofuels – at present about 1 percent of the world's arable land – could increase up to 3 percent by 2030 and as much as 20 percent by 2050.

Governments have provided substantial support for biofuel development to enable it to compete with conventional gasoline and diesel. The measures included consumption

[1] World Bank, *World Development Report (WDR) 2008.*

incentives (fuel tax reductions), production incentives (reduced taxes and direct subsidies) and mandatory blending standards. The private sector responded to these incentives, setting up processing plants for converting crops into energy in a relatively short time. Alarms were raised when the resulting increased demand for fuel crops contributed to increased commodity prices with adverse effects on consumers and environmentally sensitive land that was cleared for planting palm oil. These excesses raised some valid concerns about the impact of biofuel production on local environments, livelihoods of the displaced people and the global greenhouse gas (GHG) emissions.

The impact of increased food prices, especially on the poor, has drawn considerable attention. Yet, the potential for biofuel production to enhance the national energy security for most of the low-income countries that are also net oil importers has had relatively little attention.

According to FAO, "biofuels accounted for the fastest-growing market for agricultural products around the world and was a billion-dollar business. Increasing oil prices in recent years had had devastating effects on many poor countries, some of which spent six times as much on fuel as they did on health. In that regard, the modern form of bioenergy could create great opportunity".

These negatives notwithstanding, as a renewable energy source, biofuels can help mitigate climate change and reduce dependence on oil in the transportation sector. They can also have a positive impact on the limited foreign exchange reserves of many developing countries. When well managed, they also offer large new markets for higher prices products for agricultural producers that could stimulate rural growth and farm incomes.

This paper considers the pros and cons of the debate over the potential social, economic and environmental impact of the increase in biofuel production. It also recognizes that the developing world has its own set of bio-energy issues, which can be different from those of the developed world.

ISSUES

1. Food versus fuel – high food prices

Biofuel production has pushed up prices of some food crops, an expected outcome when they are also used as feedstock. For example the price of maize increased by 23 percent in 2006 and some 60 percent during the past two years, largely because of the U.S. bio-ethanol program.[2] The U.S. is the world's largest maize exporter and when its biofuel expansion contributed to a decline in grain stocks, it also, inadvertently, contributed to an increase in world cereal prices. Similar price increases have occurred for oil crops such as palm, soybean and rapeseed because of bio-diesel production.

Some food price increases are anticipated but, as with most aspects of biofuel, estimates vary. The International Food Policy Research Institute (IFPRI) projects maize prices to rise 20 percent by 2010 and 41 percent by 2020, with similar increases for oilseeds (26 percent by 2010, and 76 percent by 2020), and wheat (11 percent by 2010 and 30 percent by 2020). FAO, on the other hand, projects that prices of coarse grains will increase by 15 percent by 2016, whereas the price of wheat would remain unchanged.

It should be noted, however, that although price increases are blamed on increased biofuel production, issues such as stock levels, exchange movements and weather, as well as intangible factors such as speculation also affect price increase in commodities.

Historically, agricultural prices have been affected by energy prices, especially in countries that employ intensive farming practices, because the increased cost of fossil

[2] WDR, 2008.

fuel based inputs, such as diesel, fertilizers and pesticides eventually lower output. Now, with rising energy prices and improved bio-energy conversion technologies, energy prices and feedstock prices are increasingly being linked. These linkages are more readily visible in the more integrated markets of sugar and bio-ethanol in Brazil but most probably will soon emerge in other feedstock prices as well.

However, as these markets become linked, the energy prices will place a "ceiling price" on feedstock prices, because feedstock prices account for more than 70 percent of biofuel costs. Thus, in order to remain competitive for the energy market, agricultural feedstock prices cannot rise faster than energy prices, which will limit price increases.

Moreover, the new second-generation technologies currently being developed would lead to efficient conversion of ligno-cellulosic biomass (from grasses and other biomass) into liquid and gaseous energy forms. This would allow use of cellulose-rich biomass to be grown on marginal lands that do not compete with food. It would also make many more species of plants potential sources of energy.

Impact on the poor.The development of biofuel as a source of energy, when grown on a large scale, could represent a paradigm shift in agricultural development. As with all shifts, there will be both winners and losers. Urban and rural landless households, wage-earning households, rural households that are net purchasers of food and urban consumers are all expected to suffer as food prices increase.

The general price increase in most commodities has led to some concerns about the impact on the poor. Usually, as one staple becomes more expensive, people replace it with a cheaper one. But, if the prices of nearly all staples go up, consumers are left with no alternatives. If this remains the trend, some nutrition studies show that the number of food-insecure people in the world would rise by more than 16 million for every percentage increase in the real prices of staple foods, meaning that 1.2 billion people could be chronically hungry by 2025 – 600 million more than previously predicted.

However, whether the impact of a rise in food price would be as severe as noted by the nutrition studies is uncertain. There could be considerable offsetting benefits from development of biofuels. From the point of view of poor farmers who have dealt with declining commodity prices for more than 40 years (see Chart 1), increasing food prices provide an opportunity for increasing benefits and intensifying production which could lead to increased food output.

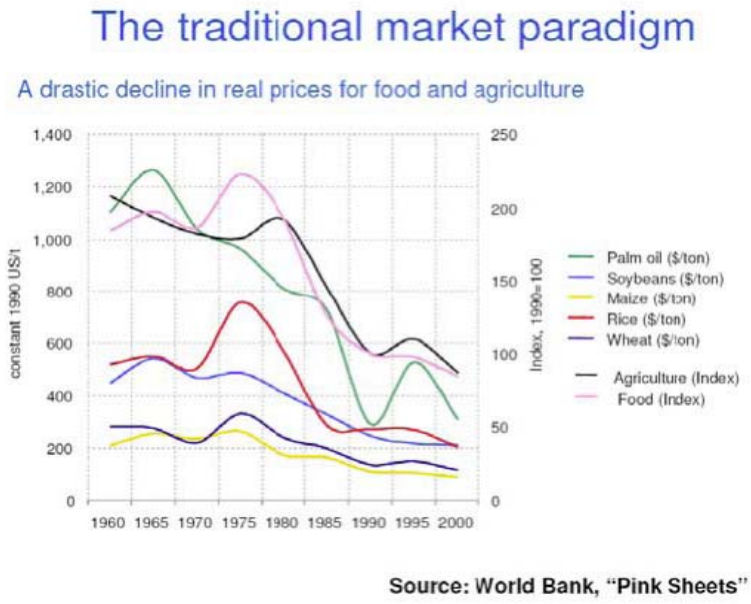
Moreover, bio-fuels can also contribute to alleviating poverty through employment creation. Because biofuel production is labour intensive, there could be significant employment creation, offsetting the overly negative picture of the food security estimates quoted above. If mechanisms are introduced to ensure that much of the increase in prices accrues to the farmers, both biofuel and increased food prices can stimulate rural economic growth through additional capital inflows, create demand for goods and services that provide employment, reduce rural-urban migration, and create linkages and multipliers.

> Biofuel production would add an estimated 9 million jobs in China, 1 million jobs in Venezuela by 2012 and up to 1.1 million jobs in Sub-Saharan Africa (S. De Keiser and H. Hongo, 2005).

This has been observed in Brazil where biofuel production in sugarcane-producing regions stimulated rather than competed with the other food crops and the income generated

through agro-industrial activities related to sugarcane helped "capitalize" agriculture and improve conditions for producing other crops.[3]

Chart 1



2. Climate change and the environment

One of the big selling, but most debated, points of biofuel is its carbon neutrality. This means that the growing plants absorb carbon and, when harvested, release only the amount of carbon they absorbed. There is little doubt that most biofuels emit fewer greenhouse gasses than fossil fuels when used for energy, thus mitigating the effect on climate change.

The debate is over the *net* carbon savings which means factoring in the amount of fossil-fuel energy needed to produce the biofuel energy throughout its entire production cycle. At issue is whether the calculation should include only inputs used directly for growing the feedstock such as the nitrogen fertilizers or the energy used by farm machinery or if it should include even the energy used to make the agricultural machinery.

The results will vary, depending on the type of feedstock, cultivation methods, conversion technologies and energy efficiency.[4] Sugarcane-based bio-ethanol saves between 80 and 90 percent of GHG emissions per mile while bio-diesel from soybeans can save 40 percent.[5] In general, biofuels from grains have lower performance, reducing carbon emissions by 10 to 30 percent per mile or, in some cases, even producing higher emissions than fossil fuels.[6]

[3] S. Zarrilli, 2006, "Trade and Sustainable Development Implications of the Emerging Biofuels Market" in International Centre for Trade and Sustainable Development *Linking Trade, Climate Change and Energy: Selected Issue Briefs* www.ictsd.org
[4] P. Hazell, *Bioenergy: Opportunities and Challenges*, presentation, Sweet Sorghum Consultation, IFAD, Rome, November 2007.
[5] *Ibidem.*
[6] *Ibidem.*

Energy parameters have been well researched for carbon savings based on agricultural practices in developed countries, but would it be correct to apply these analyses to developing countries without further study? Clearly, less use of fertilizer and labour-intensive farming feedstock production in developing countries is comparatively advantageous from the point of view of the mitigation agenda. However, the degree of advantage would need to be substantiated through further analysis.

The labour-intensive biofuel production capability of the developing world's small farmers appears to be relatively more environmentally friendly than large-scale, commercial, monocropping operations in the developed world. Due to, inter alia, low commodity prices, poor farmers of the developing world have had no funds and few incentives to buy fertilizers that emit GHGs, and they rarely use mechanized farm equipment that consumes polluting fossil fuels.

Expansion of the agricultural frontier. When land is cleared for planting biofuel crops, the effect can be harmful to the environment, because expansion of biofuel crops can displace other crops or threaten ecosystem integrity by shifting from biodiverse ecosystems and farming systems to industrial monocultures. In Brazil, it is feared that future sugarcane expansion might involve fragile areas. In Indonesia and Malaysia, 14 to 15 million ha of peat lands have been cleared for the development of oil palm plantations. According to the EU, a change in land use such as cutting forests or draining peat land can cancel GHG emissions savings "for decades".

Measures to control indiscriminate land use changes are underway. The EU is contemplating a policy proposal to ban imports of biofuels derived from crops grown on forestlands, wetlands or grasslands. Any country developing bio-fuels policy also needs to consider similar legislation to address indiscriminate expansion of land.

Soil and water management. Some feedstocks, such as sugar cane, require considerable quantities of water[7] while others such as jatropha require less. In dry areas, the competition between food and fuel crops may become the overriding issue in the fuels vs food debate and the issue could be addressed by investing in soil management and water saving technologies**,** some of which are uneconomical under present circumstances with declining commodities prices. Improvement in crop productivity as well as the shift from high water-use bio-fuel crops (such as sugarcane) to drought-tolerant crops (such as sweet sorghum) are also options to address the issue of water scarcity.

The processing of energy crops into biofuels also requires water and, though new conversion plants offer options for controlling water pollution, existing processing facilities can discharge organically contaminated effluent. All agrochemical runoff and sediments are problematic, but these problems apply as much to food crops as they do to biofuel crops.

Impact on soil is another environmental concern that, again, is not unique to biofuels. For rural areas that fertilize with crop wastes and manure rather than external inputs, biomass production could lead to dramatic declines in soil fertility and structure. But, *there are also exceptions*. Biofuel plants such as jatropha and pongamia that grow on marginal lands have potential to improve soil quality and coverage and reduce erosion while their oilcakes can provide organic nutrients for improving soil.[8] There are many different scenarios and rigorous lifecycle analysis of potential environmental impacts is needed of different biofuel production systems to ensure the development of environmentally friendly biofuel programmes.

[7] WWF, 2006, *Sustainability Standards for Bioenergy*, Germany.
[8] S. Kartha, 2006, "Environmental Effects of Bioenergy" in Hazell, P. and Pachauri, R.(eds) *Bioenergy and agriculture: promises and* challenges Focus 14, Brief 5, December. Washington, DC: IFPRI.

Local-level environment. Amid concerns that biofuel cultivation, refining, combustion and transport can result in significant environmental problems that are likely to become more acute as biofuels production and trade expand, there is also belief that biofuel cultivation can have positive impacts in rural areas where poor people have limited options to meet their energy needs. Fuelwood is usually their primary household energy source, but its harvesting is usually unsustainable and can contribute to deforestation. Burning animal dung – another important energy source – can cause serious health problems. Substituting biofuels for fuelwood and dung can increase energy efficiency and decrease health risks. At the same time, biofuel cultivation, if combined with appropriate technologies, can open the door to sustainable, low-cost, off-grid electricity generation, with the added benefits of reducing women's domestic chores and increasing opportunity for rural industry and employment.

3. Land use and tenure security

In reality, biofuels are not different from other cash crops but high demand and rapid expansion of biofuel production could increase conflict over land rights and utilization.
If land tenure systems are weak, there is risk of appropriation of land by large private entities interested in the lucrative biofuels markets. The poor, who often farm under difficult conditions in remote and fragile areas and generally have little negotiating power, may be tempted to sell their land at low prices or where land is "*de jure*" owned by the state (typical in most African countries), find their land allocated to large, outside investors.

Appropriate policies for biofuels should be developed and integrated into a broader strategy of protecting land rights of the poor and disadvantaged, including Indigenous People, who are mostly at risk of becoming "bio-fuel refugees", to ensure that they retain ownership or usufruct rights to their land. Prioritizing improvement of land policies and land administration systems will be important to maximize the extent to which poor smallholder farmers can benefit (particularly those with insecure or customary tenure) or, in some cases, to protect them.

It should be noted that competition for land uses between food and fuel is not as much an overriding issue in many developing countries, where land patterns, conditions and uses are different from those in the developed world.[9] Africa's population density is lower than in Europe and the U.S., and land use is less a factor in production than the competing use of water.

Moreover, many developing countries have large areas of land better suited for biofuel production than for food crops. Marginal and unused lands in developing countries are suitable for cultivation of biofuel crops that grow under adverse agro-ecological conditions. India's Ministry of Rural Development reports that, of the 306 million ha of land, 173 million ha are under cultivation with the rest classified as eroded farmland or non-arable wasteland.[10] A study conducted in the country determined that more than 30 million ha could be used to produce bio-diesel. Similarly it is claimed that by producing biofuel on 300 000 ha of its 4.6 million ha under crop, Tanzania could "match current fuel imports."[11]

While some of the aforementioned claims are perhaps exaggerated and the production from these areas may be uneconomic unless more productive varieties of suitable crops are developed, the central point remains that there are other options in pursuing biofuel

[9] R.Slater, 2007, *Biofuels, Agriculture and Poverty Reduction*, Overseas Development Institute (ODI).
[10] D. Fairless, "Biofuel: The Little Shrub that Could – Maybe", *Nature*, October 10, 2007.
[11] S. De Keiser and H. Hongo, 2005, "*Farming for Energy for Better Livelihoods in Southern Africa – FELISA*", Paper presented at the PfA-TaTEDO Policy Dialogue Conference on the Role of Renewable Energy for Poverty Alleviation and Sustainable Development in Africa, Dar-es-Salaam, 22 June 2005.

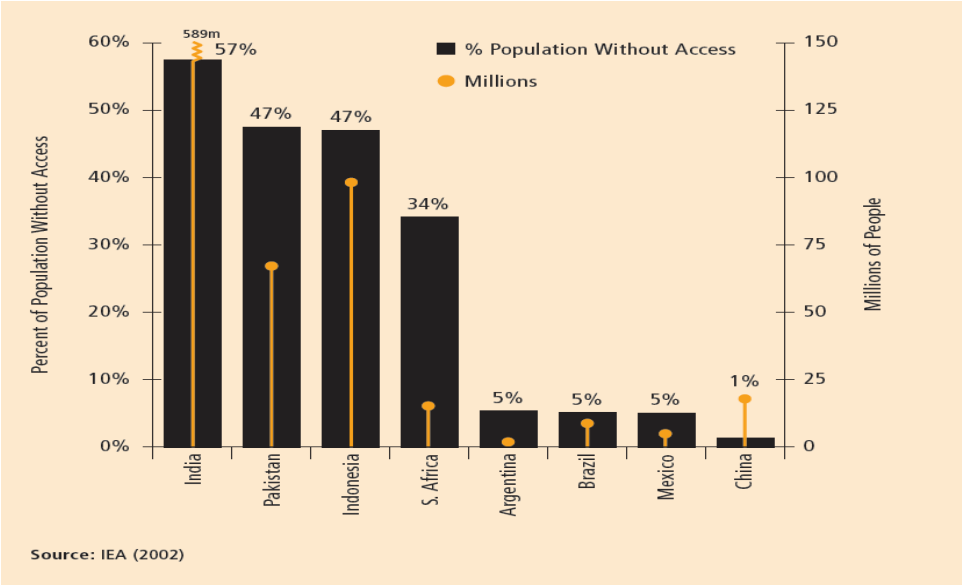
development. It is important to develop biofuel policies that avoid land use competition between food and fuel crops by producing biofuels from non-edible crops such as pongamia and jatropha that are suitable for degraded lands or from tropical sugar beet that can grow in alkaline and sodic soils, or by using multi-purpose crops such as sweet sorghum that allow both food and fuel to be harvested from the same crop.

There are other options to growing bio-fuel crops (other than food crops) and the issue in many developing countries, especially those that are both net importers of food and fossil fuel, is not food *versus* fuel. Instead, the issue is managing limited water and land resources to promote both food *and* fuel production.

4. Impact on poverty alleviation

Poverty alleviation and energy provision are linked: availability of local energy is fundamental to intensifying agriculture and agricultural development is essential to poverty alleviation. Impact of rural electrification on poverty is best demonstrated by comparing the stastistics between in India and China (see Chart 2). In this context, FAO notes the insufficient emphasis on bio-energy as a solution to the needs of the 1.6 billion people who lack access to electricity and on its potential to improve the lives of the 2.4 billion who use traditional biomass, which accounts for 90 per cent of energy consumption in poor countries but is often unhealthy, inefficient and environmentally unsustainable.

Chart 2: Population without access to electricity, selected countries



Two thirds of the low-income food-deficit countries (LIFDCs) for which data exist are also energy-deficit, with 25 of the 47 poorest countries totally dependent on imported fuels, again showing the impact of energy (or lack thereof) on poverty. These countries use much of their available funds to import oil with little left to support economic growth. Oil-importing poor countries have been hit hardest by soaring oil prices that are worsening their balance of payments. Biofuels development can improve foreign exchange reserves of most of these countries, either by substituting for imports of oil or by generating revenues through biofuel exports. Eitherway, it would contribute to the economic

development of many of foreign-exchange strapped economies of many developing countries.

Biofuels provide an opportunity for developing countries to enhance national energy security by reducing their expenditures and dependence on oil imports and exposure to the volatility of international oil prices. Brazil initiated its biofuel programme when oil prices increased in the late 1970s, primarily because it could not afford the high cost. The initial programme cost about US$4 billion and required sustained government subsidies, but they have since been removed. Today, the programme has resulted in savings of more than US$100 billion and made Brazil the world's largest exporter of bio-ethanol.

> *It is estimated that global biofuel production could expand from 50 billion litres to more than 250 billion litres by 2025, offering tremendous opportunity for the poor to participate in this vast global market. (Prakash, 2007).*

Biofuel production can be *especially* beneficial to poor producers, particularly in remote areas that are far from the consumption centres, where inputs are more expensive and prices lower, making food production, by and large, noncompetitive. In addition, agro-climatic conditions usually do not favour increasing the intensity of cropping systems. The challenge of providing poor rural people with meaningful income-generating opportunities remains largely unaddressed. Seeking solutions, projects often support niche products (apiculture, medicinal and aromatic plants, etc.), but these products usually have limited demand, long marketing chains and low producer prices.

Many of these farmers can benefit from the production of biofuels, especially from crops that do not compete with production of food crops (such as jatropha and pongamia) or multiple-use, low water-usage crops (such as sweet sorghum and cassava) that can meet the varied needs of small producers for food, cash income and animal feed. Other biofuel crops, such as tropical sugar beet, are as efficient as sugar cane in producing bio-ethanol but require far less water and, most importantly, can grow in alkaline or sodic soils that are basically unsuitable for food crop production.

POLICIES AND ISSUES IN SMALLHOLDER BIOFUEL DEVELOPMENT

Biofuel offers small farmers development opportunity…

While biofuels offer a potential source of renewable energy and large new markets for agricultural produce, the issue is how to meet the energy and food needs of developing countries, many of which are both net food and fuel importers and suffer from acute shortages of foreign exchange. Agricultural policy encouraging growth of biomass in marginal rather than prime agricultural areas would serve the dual purpose of meeting national energy and food needs. It would also require: (a) improving both food and energy crops to ensure that the plants selected for production in remote areas have the productivity to be competitive: and (b) investing in soil and water conservation practices and infrastructure to ensure competitive development of biofuels. Such policies should also aim to develop an active rural energy policy as this would provide the basis for intensifying agriculture and with it, food security.

One challenge is to design and implement policy measures to ensure that the growing use of bio-energy is conducive to reducing poverty and hunger and, thus, that "bio-energy becomes pro-poor". This will be the case if the production is labour intensive, the processing technology for provision of local energy is simple and there is promotion of public-private sector partnerships when producing for national or international markets.

Economies of scale are necessary for farmers and developing countries to take advantage of biofuel opportunity. Yet, small-scale farmers face obstacles in accessing

supply chains, transporting crops to processing plants or selling through middlemen and policy measures would be required to ensure that small farmers are part of the national drive to promote biofuel production.

Existing institutions also have a crucial role in making bio-energy pro-poor. Cooperatives or producer companies, for instance, can bundle the interests of the poor, accumulate and attract capital and partnerships for the necessary investments, organize feedstock supplies in large quantities and, in turn, create a countervailing power to the larger firms operating in the energy market.

… but not without risks

Loss of access to land. The sheer speed of biofuel expansion may generate new pressures on land tenure arrangements, leading to alienation. There is considerable fear that the poor may either sell or be forced to relocate as the rush to meet increasing demand gathers momentum.
As biofuel development is taking place rapidly, this issue needs to be addressed as a matter of urgency – to move beyond debate and advise farmers and governments of the opportunities and risks associated with biofuel production.

Unfair business practices. Smallholder farmers and rural people engaged in supplying private companies with raw materials for biofuel processing often lack legal recourse in the event of reneged contracts. Pro-poor organizations are needed that can provide countervailing power to the affluent companies involved in up-stream processing and distribution.

Environmental risks. Agricultural practices that are not environmentally friendly could lead to soil degradation and depletion of natural resources. Policies promoting sustainable farming activities, such as conservation agriculture, can protect the natural resource endowments of the poor and avoid bad practices such as deforestation that would increase GHG emissions. The relative advantage of reducing GHG emissions following less intensive farming indicates that incentives need to be provided to developing countries, especially poor farmers, to encourage them to mitigate the effect of climate change.

Natural risks. Farmers involved in biofuel production are subject to the effects of extreme weather situations such as droughts or floods. These are natural risks and, as with all other crops, measures need to be considered to mitigate their effects through insurance mechanisms.

Advent of new technologies. As new second-generation technologies are developed, first-generation technologies may become noncompetitive. This is a normal business risk and, as with any other product, measures should be considered to ensure that value chains have the means and resources to adapt to emerging opportunities.

Decrease in price of fossil fuel. There is some risk that the price of fossil fuels could decline, rendering biofuels noncompetitive, although experts generally agree that with rising demand and depleting reserves, there is little probability of this occurring.

Paradigm shift could create losers. It is important for the donor community and governments to ameliorate the impact as biofuel production gathers momentum.

Gender-differentiated risks. As it often occurs due to pre-existing gender inequalities, there is risk that women benefit less than men. Bio-fuel development policies should be consistent with the promotion of gender equality and women's empowerment, to ensure that women engage in, and benefit from, this emerging opportunity.

Energy markets are much larger than the food markets. The emerging markets for biofuels offer an unparalled opportunity to benefit the poor on a large scale through agriculture. While there are some risks, the key question is: Are they so insurmountable to deprive many of the poor from taking advantage of this opportunity to improve their livelihoods? In this context, is it time to move beyond the "food vs Fuel" debate and not view it as just another trade-off.

WHAT IS IFAD DOING TO ENSURE PRO-POOR BIOFUEL DEVELOPMENT?

IFAD's new Strategic Framework (2007-2010) recognizes biofuel as an emerging market opportunity for the poor, especially those living in remote areas where almost 70 percent of IFAD's projects are located. In these areas, food production is challenging because the areas are remote from the consumption centres, inputs are more expensive and prices lower, making food production for commercial purposes, by and large, noncompetitive. In addition, agroclimatic conditions do not favour increasing cropping system intensity, and the challenge of providing meaningful income-generating opportunities for people remains largely unaddressed.

IFAD has financed, *inter alia,* two research grants to address these issues and enable poor rural people to take advantage of the huge market demand for biofuel production and meet their varied needs, while expanding employment and income-generating opportunities.
The first grant, which was approved by the Executive Board in September 2007 is being implemented by ICRISAT and other partners, focuses on biofuel crops, such as jatropha, pongamia, sweet sorghum and cassava, that can grow under adverse agro-ecological conditions that prevail in remote areas. It explores the potential for improving plant productivity and integrating these crops into smallholder farming systems. The grant will also study the economics of rural electrification and assess its impact on poverty. The second grant , which is being implemented in partnership with the Asian Development Bank, will identify strategies for developing biofuel crops to benefit rural poor households in the Mekong sub-region.

A third research grant will link smallholder farmers to agro-industrial processors in Cambodia, the Lao PDR and Viet Nam, using feedstock crops, such as cassava. This will be presented to the April 2008 Executive Board.

Other efforts to explore pro-poor options for biofuel development include: (a) establishment of private sector links to promote biofuel crops of special relevance to the poor living in areas affected by salinity and (b) global consultations organized in partnership with UN Foundation, FAO and ICRISAT to guide the research programme.

Other planned activities will focus on building partnerships with bi-lateral and multi-lateral donors and research institutions to mainstream biofuel development, and working closely with other International Land Coalition (ILC) members and other UN agencies to address land issues that might arise as biofuel development gains momentum. IFAD is also in the process of finalizing a corporate land policy and developing operational guidelines that can help guide the integration of activities aimed at strenghtening land tenure security of its target group into new grant and loan projects and programmes.

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