

Reducing Poverty and Protecting the Environment: The Overlooked Potential of Less-favored Lands

Peter Hazell and James L. Garrett

Faced with limited resources and the need to feed 90 million more people every year, governments and donors want to know whether they should invest in regions with inherent potential to be highly productive, or in less-favored areas where large numbers of poor farmers live and increasingly overexploit natural resources just to survive.

Less-favored Lands and People

Lands can be "less favored" by nature or by man for many reasons. Some areas, often on hillsides, have soils that are at risk for degradation but could produce good crops under certain conditions. Others have soils that are so poor farmers cannot even think about growing crops there. Others have productive soils but are inaccessible and need infrastructure like roads to make it worthwhile for farmers to increase production. Many less-favored areas are in mountainous regions or tropical lowlands and have low, unstable rainfall. Many less-favored lands also suffer from environmental degradation because they are supporting a population beyond their capacity and need to be rehabilitated.

About 3,200 million hectares of land in developing countries are less favored, although land improvement could make some of this marginal land more productive, just as degradation could make it worse. Eighty-two percent of less-favored lands are considered best suited for grazing and forest.

As many as 500 million poor people in developing countries now live in less-favored lands, including the upper watersheds of the Andes and the Himalayas, the East African highlands, and the Sahel, all of which have experienced severe degradation. Although less-favored areas make up only about 24 percent of the total land area in developing countries, they contain more than 36 percent of all the rural poor. The largest share of these people, 263 million, live in Asia; 160 million live in Sub-Saharan Africa. Another 40 million live in Central and South America, and 11 million in Western Asia and Northern Africa. If current conditions persist, by 2020 more than 800 million poor people are expected to live in less-favored lands.

Challenging Conventional Wisdom

Given constraints on production in less-favored lands, conventional wisdom says that governments and donors should not invest there but in high-potential areas. Why? Because, by definition, investment in high-potential areas generates more agricultural output and higher economic growth at lower cost than in less-favored areas. Faster growth leads to less poverty as people in marginal areas migrate to jobs in more productive areas or obtain nonfarm jobs. Fewer people will try to live on marginal lands, and food prices will fall as supplies from high-potential areas increase. Migrants will also send part of their wages back home, helping to reduce poverty.

In the past, many governments and donors have adopted this strategy and provided high-potential areas with better roads, communications, schools, health facilities, and agricultural technologies. Credit programs as well as pricing policies for production and for agricultural services and inputs have also tended to favor these areas, or at least the crops produced there. Yet, despite considerable outmigration, population and agricultural production in less-favored areas continue to grow, often in association with worsening poverty and resource degradation. Furthermore, after years of intensive use of irrigation and chemical inputs, erosion and salinization are affecting many high-potential areas. Potential yields are declining. In some instances, as capital-intensive technologies displace workers, the development of high-potential areas has actually encouraged migration to less-favored areas. Thus, the sustainability of this strategy is even now in doubt. Success is especially uncertain for predominantly agrarian countries, like many in Africa, with only limited high-potential land and nonfarm opportunities.

Growing numbers of people are now challenging the conventional wisdom, arguing that governments and donors should invest more in making agriculture in less-favored areas more productive. With higher incomes, farmers will be better able to care for their land and also enjoy a higher standard of living. Recent knowledge about how to make less-favored lands more productive has also lowered the costs of agricultural production there, making investment more attractive economically.

Government and donor agencies could, of course, try to increase incomes in less-favored areas by promoting nonagricultural or postharvest activities, instead of agriculture. But in most rural areas, the generation of significant nonfarm income depends critically on having a dynamic agriculture sector. If regional agriculture stagnates, the local economy has no engine to drive nonfarm activities.

In Africa, for example, less-favored areas are often isolated from the rest of the economy. Low incomes limit demand. With investment, agriculture starts to grow; incomes and expenditures of local people increase. Opportunities to diversify production of agricultural and nonagricultural goods and services, including microenterprises and agroprocessing, open up.

Of course, less-favored areas are highly diverse, and climatic, biological, or geographical constraints sometimes hinder agricultural production so that no agricultural investment is worthwhile. No one is recommending irrigating the Sahara, for example. Yet the possibilities for sustainable agricultural intensification in less-favored areas, even when soils are degraded, are much greater than previously thought. The key is to improve the productivity of the natural resources and people there with the right investments, technologies, policies, and institutions.

Less-favored areas often have pockets of reasonably productive land, such as valley bottoms or southern slopes. In the central highlands of Honduras, once improved roads connected hillside villages to the capital city, farmers discovered an active market and began to grow garden vegetables in the patches of good land in the area and to use local streams for small-scale irrigation. In some cases, such as the Machakos District in Kenya, severely degraded land can be recovered. The Machakos District now produces three times more agricultural output per capita as a few decades ago, despite a fivefold increase in population.

Investment in less-favored areas can also save on relief program costs and complement the strategy of investing in high-potential areas. The United Nations calculates that relief operations cost about US\$70 per person in external resources. Investment in less-favored areas could save part of that money by reducing the need for such programs. Moreover, with improved roads and education, outmigration from less-favored lands may be accelerated.

Strategies for Agricultural Intensification

Strategies to get agriculture moving in less-favored areas will typically have to be different from the Green Revolution model. Less-favored areas often have poor infrastructure and are subject to increased risk of flood and drought. These conditions combine with poorer soils to lower yield response, making the intensive use of chemical inputs uneconomical. At the same time, the poor soils of many fragile lands cannot sustain intensive monocultures of annual crops.

The following are key elements of intensification strategies for less-favored areas:

- *Improve technologies and farming systems.* Better integration of annual crops with perennial crops, farm trees, and livestock at both the farm and landscape levels can improve management of soil fertility and organic matter, conserve moisture, control erosion, and generate and recycle plant nutrients. Agricultural research and extension services should give more attention to improving farming and resource management systems, as well as specific commodities. This will require research to be more multidisciplinary, more responsive to farmers' perceptions of local problems, and more integrated with the policy and institutional changes needed to

improve incentives for the uptake of sustainable resource management practices. Farmers and communities will have to invest in complementary land improvements such as contouring, stone and vegetative barriers, and agroforestry.

- *Ensure secure property rights and effective institutions.* When farmers do not have assured long-term access to land, do not bear the full cost of resource degradation, or are not sure they will receive the benefits of their investments, they are more likely to pursue unsustainable farming practices and fail to invest in improving and conserving resources. Governments should ensure that farmers have secure property rights, and should remove restrictions that inhibit the most efficient and environmentally sustainable use of private, public, and common property. Many community-based land tenure systems provide farmers with adequate security. When appropriate, governments should strengthen these indigenous systems and facilitate their adaptation to changing circumstances, instead of replacing them. This is particularly true of local organizations that manage common properties such as rangelands, woodlands, and wetlands. When adequately empowered, they are often best able to take account of resource interdependencies and establish regulations that recognize the rights of many users over the same land. Such regulations are especially important in watersheds or drought-prone areas that require the ability to move animals over wide areas as an integral part of risk management.
- *Manage risk effectively.* Risks of crop disaster due to bad weather or pests can discourage investments by farmers in land improvements and their adoption of higher-yielding technologies. Agricultural research can help reduce risk, for example, by improving drought resistance in crops or developing better ways to conserve soil moisture. Additionally, governments may need to assist farmers in coping with catastrophes and work to provide effective safety net programs and credit and insurance markets. However, care should be taken in designing such interventions, for they can easily backfire. Subsidized drought insurance, for example, increases the profitability of more risky farming practices, some of which may be environmentally unsuitable for drought-prone areas. Subsidized fodder programs in drought years for rangeland users can also encourage overstocking, which over time degrades the range.
- *Provide the right policy environment.* Market reforms, including price and trade liberalization, are also necessary to ensure that prices provide the right production signals to farmers and that production and input markets are competitive and work well. Governments should make sure that farmers have access to good roads, telecommunications, and a strong credit and savings system. Without them, farmers cannot be sure that they will be able to sell their crops or get the inputs, like credit and fertilizer, that they need.

Policies that penalize crops grown in less-favored areas, such as programs that subsidize wheat imports and displace traditional grains, should be eliminated. Governments will also need to increase public investment in education, clean water, and the health of rural people so they can take advantage of the market.

Governments and donors should look more closely at the benefits of investing in the agriculture of less-favored areas. Even without including social and environmental benefits, the line can already be redrawn on what is economically justified. This line may well shift even further in favor of less-favored lands as agricultural research opens up new development possibilities. These investments become even more compelling when the social benefits from reducing poverty, food insecurity, and environmental degradation are considered.

Addressing the complex challenges of less-favored areas will not be easy or inexpensive. It will typically require significant policy and institutional changes, investments in agricultural research, rural infrastructure, human capital, and the active involvement of local communities. Success will depend on the development of stronger linkages between agricultural researchers, local governments, farmers, community leaders, nongovernmental organizations, national policymakers, and donors. On their own, none of these agents of change are likely to succeed. But by working together, they can take advantage of significant opportunities now and in the future to reduce poverty and protect the environment in the areas that until now have been less favored.

Peter Hazell is director of the Environment and Production Technology Division and James L. Garrett is a postdoctoral fellow at the International Food Policy Research Institute.

"A 2020 Vision for Food, Agriculture, and the Environment" is an initiative of the International Food Policy Research Institute (IFPRI) to develop a shared vision and consensus for action on how to meet future world food needs while reducing poverty and protecting the environment. Through the 2020 Vision initiative, IFPRI is bringing together divergent schools of thought on these issues, generating research, and identifying recommendations. The *2020 Briefs* present information on various aspects of the issues.