Stimulating Agricultural Growth and Rural Development in Developing Countries

Most of the poorest countries in the world are found in Africa and Central and Southern Asia, although they are sprinkled throughout Latin America, Eastern Europe, and the Middle East, as well. Nearly all are dependent on agriculture as the major source of income and sustenance for their largely rural populations. Most rural people in these countries remain in poverty because agriculture has not grown fast enough to keep up with population growth and non-farm employment opportunities are lacking.

Contemporary agriculture and rural development faces a broad range of issues that impact the outcomes of any initiative. The magnitude of the challenge can be easily understood by looking at some numbers. In the 1990s, average per capita income in developing countries grew at a rate of 1.6 percent per annum. This will have to increase to about 3.6 percent per annum to achieve the Millennium Development Goal (MDG) for cutting poverty in half by the year 2015. Since 24 percent of total output comes from agriculture in low-income countries, faster agricultural growth is essential to increasing income. In fact, agriculture will have to grow at about 3.5 percent per annum—a full percentage point higher than the rate in the 1990s—in order to contribute adequately to the poverty MDG. Of course, growth is not enough. Growth for which benefits are widely distributed is required for poverty reduction.

A series of high-level international meetings reaffirmed the commitment of donor nations to development and confirmed that agricultural growth and rural development are key ingredients to moving poor countries out of poverty. Actually stimulating agriculture and rural development in poor countries will be much more difficult than declaring the intent to do so. What is needed is a combination of industrial country reform of agriculture and trade policies; more aid for agriculture and rural development; and expanded investment programs and appropriate pro-rural policy changes in developing countries.

Ingredients for successful agricultural and rural development

Successful experiences with agriculture and rural development are found in parts of East Asia, Central Europe, and several Latin American countries. Ghana and Mozambique have had some success, although a considerable amount of extreme poverty and hunger remains. Despite the successes, there are also a number of failures to learn from, as well. Based on the successes and the failures of the past, we have identified a number of critical ingredients for successful development of the agriculture and rural sector.

1. **Sufficient public investment in rural areas.** The countries that have successfully developed their rural areas have demonstrated their commitment by allocating public resources to rural areas for the necessary infrastructure, research, and technical assistance to increase agricultural and non-farm productivity. Appropriate public investment to provide rural health care and education is also critical to productive population.

2. **Good governance.** Good governance is an essential ingredient to ensure appropriate public expenditure management for the rural services mentioned above and to create a positive climate for private sector investment in rural areas. Farmers—whether family or corporate—are entrepreneurs, and entrepreneurs will not invest in an activity that is excessively taxed; unprotected by the rule of law; or located in a place with no roads, water, or electricity. Therefore, countries like Chile, with a system of governance that supports a rural investment climate have experienced substantial growth in the agriculture and rural sectors.

3. **Political stability.** This differs from governance in that it refers more to the absence of war or other violent civil strife. In much of Africa, parts of
Central America, and Central Asia, where agriculture is floundering, this ingredient is sadly lacking. Civil strife and civil war destroys lives, infrastructure, and security. It should come as no surprise that millions of desperately poor and hungry people live in countries like the Congo, Sierra Leone, Sudan, Liberia, Afghanistan, and Haiti, where civil war or extreme civil strife is almost incessant.

4. Economic growth and income generation. A broader element of success has been a growing economy that creates the income needed for consumers to buy an increasing amount of agricultural produce. Growing economies are dependent on the same good governance, good economic policy, and helpful public investments that successful agriculture is dependent on—a virtuous circle.

5. Managing risk and vulnerability. People that depend on agriculture for their incomes are some of the most vulnerable in the world. External factors, such as climate, drought, and fluctuating prices for agricultural products, can undermine the work of farmers in one event or one season. The recent drought in Southern Africa caused starvation, and emergency assistance, including food aid, was needed. This income instability makes it harder for farmers to access the needed credit and other financial services that could cushion them against shocks. The World Bank is examining and implementing various tools and approaches that can reduce the impact of external shocks, such as irrigation, crop insurance, and rural microfinance.

6. Agricultural and trade policy reform. Long an issue, but only recently addressed by the donor community, is the impact of American, Japanese, and European agriculture and trade policy on developing countries. The agriculture sector thrives where there is cheap land and labor—indicating a comparative advantage for developing countries. However, high subsidies and high levels of protection in OECD countries keep developing country farm products out of OECD markets, while also keeping world agriculture prices artificially low. When poor countries cannot access OECD agriculture markets, there is little incentive for them to invest in agriculture.

All of these ingredients reflect one underlying necessity for success—government commitment to rural development. In its new strategy, Reaching the Rural Poor, the Bank has committed itself to helping its client countries develop their own national rural development strategies that will strengthen agriculture and reduce rural poverty. Through a combination of advocacy, analysis, and technical assistance, the Bank will urge reform in industrial countries and help developing countries create true commitment to agriculture and rural development through public investment, policy reform, and institutional development.

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2 The meetings include the International Conference on Financing for Development in Monterey Mexico, the World Summit for Sustainable Development in Johannesburg, and the World Food Summit in Rome, all of which took place in 2002.
3 Examples include South Korea, Thailand, and increasingly China and Vietnam.
4 Chile was the first Latin American success, but Brazil and Mexico have more recently had some success, as well.
5 Assistance to farmers, like the massive subsidies provided to farmers in the United States, Japan, and Europe—totaling together US$300 billion to US$350 billion per year—is not necessary and would, in fact, be counterproductive.
6 The 1994 World Bank report Governance: The World Bank’s Experience, states that “good governance is epitomized by predictable, open, and enlightened policymaking (that is, transparent processes); a bureaucracy imbued with a professional ethos; an executive arm of government accountable for its actions; and a strong civil society participating in public affairs; and all behaving under the rule of law.”
International Trade in Agriculture: a Developing Country Perspective

Seventy percent of the world’s poor live in rural areas and nearly all are dependent on agriculture as the major source of income and sustenance. Most rural people in these countries remain in poverty because agricultural productivity has either stagnated or has not grown fast enough to keep up with population growth. The World Bank’s refocused agenda for agriculture, which is outlined in Reaching the Rural Poor, recognizes the need to move from a narrow agricultural focus to a broader policy context—including global factors. Agriculture in low-income countries will have to grow at an aggregate rate of close to 3.5 percent per annum in order contribute to the Millennium Development Goals (MDG) for poverty reduction. This growth requires investment, which has not been forthcoming in recent years. Simply put, if farmers cannot access international markets, they cannot make a profit from their work. If agriculture in developing countries is not profitable, there will be only limited investment in the sector. Therefore, one of the critical global factors that the World Bank will address is international agricultural trade and access to markets.

The Bank’s agenda includes advocating reform of trade and agriculture policies in both developing and OECD countries, as well as building capacity within developing countries to negotiate at the WTO and to establish systems that ensure their products meet international quality and traceability standards.

Reform in OECD countries

Promoting rural development in OECD countries is a legitimate and laudable goal. The problem is that the policies adopted to achieve this goal—protecting and subsidizing agriculture—seriously damage poor countries. These policies penalize poor countries by restricting their possibilities for trade precisely in those areas where they have comparative advantage. They lower the world price of many commodities and increase price variability, both of which are especially damaging to developing countries.

In 2001/2002, with cotton prices at an all time low, the U.S. provided US$4 billion in support to its cotton producers. This is more than the GDP of Benin, where cotton production makes up 85 percent of exports. In 2002, the International Cotton Advisory Committee estimated that the effect of U.S. subsidies alone costs the West African countries around US$250 million per year.

Agricultural subsidies in large countries can devastate small countries and regions that rely on specific commodities.

In both the short and the long term, the developing countries will gain the most from eliminating border protection. The estimated annual gain to developing countries from liberalization of agriculture and food by high-income countries is more than US$30 billion (World Bank, 2002).

In the OECD countries, subsidies and agricultural protection drain government budgets, damage the environment through overproduction, and distort prices and patterns of development. These policies impact the poor even more because poor people spend a larger share of their income on food than the rich. In addition, large farmers and land owners get a much larger proportion of benefits. Policies that keep domestic commodity prices high have negative “spillover”
effects, with the result that downstream markets may need similar protections; otherwise, they may have to leave the country in order to stay competitive.

The Bank advocates reforming agriculture and trade policies in order to achieve national rural development goals without inflicting such high costs on domestic consumers and on poor countries. The first three steps to reform are:

Decouple support from production. To continue promoting rural, agriculture-based livelihoods, the link between direct subsidies and production must be broken, i.e., decoupling. Instead, payments could be targeted to areas like rural development, maintaining environmental and quality standards, and ensuring animal welfare. The affect of subsidies on production and, hence, on prices would be far lower for the same level of aggregate support. Decoupling can reduce over-production and, therefore, the need for export subsidies to dispose of surpluses. These export subsidies in all forms, including the subsidy element in export credits and program food aid, should then be phased out.

Greatly reduce tariff peaks and the average level of border protection. Although the industrial countries boast average ad valorem tariffs of less than 5 percent on manufactured goods, the highest agricultural tariffs are 40 times the average tariff in the OECD countries. Tariffs are also escalated along the production chain, discouraging processing in developing countries—essentially a tax on development. Making tariffs more uniform will mitigate this problem.

While the discussion of policy reform has focused on OECD examples, the problem extends beyond OECD countries. Average tariff levels are high in developing countries, and reducing these levels of protection has the potential of increasing south-south trade and generating more income for households in these countries. In 2002, the World Bank estimated that developing countries would gain an estimated US$114 billion from their own liberalization of agriculture and food. Middle-income countries are increasingly important markets for low-income country producers, and this trade has great potential to expand. As long as OECD policies constrict market opportunities, there is no incentive for developing countries to liberalize, and calls for reform are seen as unfair. There is also a perception that what is “good” for industrialized countries is “good” for developing countries. OECD nations have set a bad example; one that should not be followed.

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1 This gain would come from developing country liberalization even without OECD reforms.


OECD, Farm Household Incomes in OECD Countries, January 2003.

Water for Agriculture: Shaping the Future of Rainfed and Irrigated Agriculture

The specter of the global food shortages of the 1960s has been driven away by innovations and appropriate investments in green revolution and water control technologies. Increases in irrigated areas and improved yields have largely contributed to stabilizing food production per capita, despite significant increases in population and per capita energy intake. To date, irrigated agriculture supplies about 40 percent of the world’s food while accounting for only 17 percent of the cultivated land.

However, these positive outcomes have been achieved at a cost: Government support to irrigated agriculture included subsidization of infrastructure and inputs, especially water and power. Irrigation water has been allocated administratively rather than through economic mechanisms on government schemes, which has resulted in significant inefficiencies and has generated many negative externalities for which there was inadequate accounting.

Shifting views and policies

The negative impacts of agriculture irrigation, such as impact of over-abstraction, discharges carrying agro-chemicals, salinity buildup, and draining more water than is replenished, have likely contributed to the significant decline of Bank support to irrigation and drainage (I&D). In FY03, Bank lending for new I&D projects dropped to a record low of $220 million.1 Ever-dropping food prices that made new investments in I&D difficult to justify economically also contributed to this decline, as did regulations imposed on I&D projects that make design and implementation less attractive to managers, directors, and Bank staff.

Increasing demand for water by other users, growing environmental, social, and financial challenges, and lower payoffs for agricultural water investments indicate the need for a change in the way future irrigation programs are designed. To rationalize its share in the use of available water and increase its efficiency and productivity, agricultural water management has to change significantly: Policies and institutions must be adjusted, hardware investments must be made if justified, and novel technologies must be developed and disseminated. Agricultural water should enhance rural growth and make the rural economy flourish, in addition to helping subsistence farmers produce more food. Environment and biodiversity should be integral factors in design and management of these projects.

The Bank’s new corporate strategies for rural development, water resources management, and environment assign a key role to agricultural water, recognize the major challenges the sector is facing, and stress that future investments in the sector should be supported by far-reaching policy reforms.2

Bank action in the sector

The proposed agricultural water issues and approaches initiative is part of the effort to implement the Bank’s new rural development strategy, which refers to agriculture as the main source of rural growth and the cornerstone of rural poverty reduction in most developing countries. The initiative’s goal is to address the social, economic, environmental, and technological constraints identified by the rural development strategy and to prioritize actions to improve the Bank’s agricultural water activities. Proceeding in conjunction with the principles laid out in the Bank’s water resources management and environment strategies at the corporate and regional levels, the initiative will provide a framework for analyzing impacts and synthesizing good practices in Bank lending for agricultural water. Specifically, the initiative aims to develop an approach that facilitates pro-poor interventions, sustains natural resources, promotes agricultural growth, and enhances food security. The focus on the sustainable management of resources, institutions, technology, social well-being, and environment entails addressing the political economy of reforms proposed for the sector—shaping components for equity, packaging and sequencing them for political feasibility, and
questioning the competitiveness of schemes. Future work by the Bank will address the following global and region-specific issues and approaches.

**Regional and country priorities.** Agricultural water priorities should focus on the priority regions and countries identified for the implementation of the rural development and water resources strategies and seize opportunities that are ripe.

**Agricultural water and future demand for food and fiber.** Current forecasts of food and fiber requirements by sector and non-sector organizations (IWMI, FAO, and IFPRI) suggest a need to increase not only yields but also irrigated land and irrigation water.

**Pro-poor focus.** The sector’s paradigm needs to shift away from an exclusive focus on food production to a wider focus on income generation and the creation of an environment for a more vibrant rural economy.

**Incentives and institutions.** There is evidence that incentives both for the service provider and the water user could improve efficiency, accountability, transparency, and effectiveness. Incentives like water pricing and water rights could improve services and practices that, in turn, would raise production and productivity and also promote sustainable use of the resource base, including the protection of environmental services.

**Appropriate and cost-effective technologies and management practices.** A variety of new technologies need to be assessed in terms of their costs, their potential benefits to different regions, and the requirements for dissemination and adoption.

**Investments and financing options in agricultural water.** There is a variety of possible investment options to modernize and rehabilitate infrastructure, including restoring and reclaiming degraded and salinized lands. The Bank’s examination of these options will focus on public-private partnerships in financing and managing I&D projects.

**Agricultural water and other water using sectors and environment.** What is the optimal allocation that will minimize land degradation, encroachment on sensitive and protected areas and wetlands, and downstream pollution from agrochemicals, waterlogging, salinization, and resource depletion?

**Safeguard policies.** It is imperative that safeguard policies are used as incentives rather than inhibitors.

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1. Not only I&D lending but the entire agricultural and rural portfolio decreased over the last 15 years.

2. Agricultural water includes irrigation on large, small and micro schemes, drainage of rainfed uplands, valley bottoms and deltas, productive watershed restoration and rainwater harvesting.

3. There is a wide set of definitions to express water use efficiency in irrigated agriculture. Water productivity is measured by the ratio between water input and crop output.
Using Markets to Manage Commodity Risk

While economies are diversifying, commodities are still an important part of export revenues in several developing countries and an important component of income for the poor. Commodity revenues are notoriously volatile, mostly because of variations in price, yield, and weather variations. The best method for protecting the exposure of governments and households to commodity-related risks remains an important challenge.

Searching for solutions

Accelerated growth and better income-generating opportunities in rural areas are the long-term solutions to commodity producers’ low and volatile incomes. For this reason, the World Bank is focusing on broader rural development. Other, short-term World Bank initiatives are examining the feasibility of using markets to protect small farmers in developing countries against commodity price and weather shocks.

Commodity Price Risk Management. Price risk management instruments, such as forward contracts, futures, and options, provide farmers the opportunity to protect their short-term commodity revenues from declines in world commodity prices. These instruments cannot stop the overall downward trend in prices, as with coffee, for example. However, they can protect against the negative effects of world price volatility within a crop year. This allows farmers to manage their farms more efficiently in terms of allocating inputs and labor. Using risk management instruments, farmers have more time to adjust to long-term downward price falls. In addition, farmers can use price risk management instruments to improve the timing of sales and potentially achieve a better price.

This instrument also enables access to credit, an important issue given the financing problems that farmers face in several developing countries. Sharp declines in commodity prices often seriously affect the functioning and viability of much of the formal and informal credit sectors, particularly if these commodities are important to the agriculture sector. This makes it increasingly likely that any future lending from banks to the agriculture sector will require increased collateral and guarantees it as a necessary condition for credit. Price risk management instruments may allow banks to extend greater amounts of lending at better rates with the knowledge that their clientele can secure a minimum price for their commodities.

In 1999, the World Bank initiated a project to provide price protection to small-scale commodity producers in developing countries. The project is being carried out in partnership with the private sector, donors, and other international organizations. After an initial period of research and study on the feasibility of using price risk management instruments to help farmers in developing countries manage their risk, the project has evolved into the implementation of price risk management programs. The implementation phase involves providing the requisite technical assistance and training that developing country actors need to conclude transactions with private sector providers. Since the second half of 2002, eight actual transactions with producer organizations have occurred in Nicaragua, Tanzania, and Uganda. Thus far, a coffee cooperative in Tanzania, a local coffee exporter in Uganda, and a bilateral assistance program in Nicaragua have purchased put options that provided price protection to small farmers against declines in world coffee prices. In Uganda and Nicaragua, the initial transactions were small volume and one-time businesses. In Tanzania, the coffee cooperative entered the market repeatedly and hedged most of their exposure over an entire selling season. The providers of risk management instruments to these organizations were the commodity divisions of international banks and an international commodity trader. Some of the early key results, which were presented at a meeting in London in June 2003 where a wide range of partners participated, included the following:
Actual transactions have helped producer organizations get better access to credit at lower interest rates.

With hedging, producer organizations were able to better manage their coffee sales (i.e., by better timing their sales) and improve their overall financial management.

Some local banks have strengthened their business in commodities by linking loans to commodity hedges.

Providers of risk management instruments like international banks and commodity brokers see this as a new line of potential business and are interested in and supportive of the project.

The current volume and number of transactions are still small and must be expanded substantially to make commodity price risk management commercially viable, which may be a slow process according to private sector providers. Transactions of this nature require significant capacity building and technical assistance for producer organizations which, given the relatively small volume of business, is a costly and time-consuming activity for those providing the assistance, such as the World Bank. Scaling up the initial pilot transactions in a cost effective way is a key challenge that the project faces.

Weather and area yield risk management instruments. Commodity producers, traders, processors, and governments are all subject to weather-related risks so weather risk management is useful for all of these groups. In the case of drought, local and/or state governments can use weather insurance to provide needed funds to import food and to finance targeted programs for the poor people affected by the drought. Farmers and agri-businesses also need drought insurance to repay their credit. Weather insurance markets are relatively new even in industrial countries—they started in 1996 in the US—but they are already being applied in developing countries. Major international banks and re-insurance companies are active over-the-counter (OTC) weather market-makers, and some of them have been involved in weather transactions in emerging markets in places like Argentina, Brazil, Mexico, South Africa, and India.

World Bank projects in this area attempt to catalyze the development of markets in client countries. Implementation has already started with transactions in the agricultural sector in Mexico and India, while additional transactions are in the final stages of preparation in Morocco and Ukraine. The Bank Group, including the World Bank and International Finance Corporation (IFC), has contributed feasibility studies, analytical studies, and may have components in lending operations in the cases of Mongolia and Ukraine. Similar to price risk management, the transactions to date are relatively small, but they indicate the potential of using new risk markets in developing countries. Most of these transactions are linked to credit. Weather risk management has attracted the attention of the IFC, and there are already two projects underway in this area: the creation of a global weather risk facility and a weather insurance project in Morocco to provide insurance against drought.

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1 The partnership, known as the International Task Force includes the European Union, Government of Switzerland, Government of the Netherlands, FAO, UNCTAD, CFC as well as international banks, brokers, traders, and producer organizations from the private sector.

World Fisheries: Coping with a Global Crisis

The importance of the fisheries sector in coastal developing countries

Fifty million people are directly involved in the harvesting and processing of marine fish products. Of that 50 million, roughly 95 percent are from developing countries. In many coastal developing countries, the fisheries sector is a significant component of the national economy with contributions to GDP as high as five to 10 percent in countries like Vietnam or Mauritania.

Fish is the major source of food or income for almost one billion people globally.

Fisheries and rural poverty are inextricably linked in many of the World Bank’s coastal clients. In fact, open access to fisheries drives a large number of people to fish as an occupation of last resort when other sectors, such as agriculture, decline. As a result, fishers and their families are often considered to be among the poorest of the poor. Whether touring China and Indonesia, Peru and Argentina, or Mauritania and Senegal, visitors to many coastal fishing communities are likely to be struck by the dilapidated appearance of homes and the absence of basic social services. In Thailand, for example, the 47,000 households of small-scale fishers are scattered among 2,500 rural fishing villages where the majority lack basic infrastructure, such as roads and electricity, and the average annual income is less than US$1,930 per household—80 percent of which comes from the fisheries.

The current crisis facing the world’s fisheries

Based on reports from FAO and recent scientific studies, whose findings were featured in U.S. News & World Report, Newsweek International, and The New York Times, many scientists have concluded that the world’s fisheries are now facing a crisis from overexploitation. Scientists have recently published findings suggesting that the biomass of the global ocean’s large predatory fishes has declined roughly 90 percent since the onset of industrial fishing. According to FAO, at least one-third of the world’s major fisheries is overfished, and half are fully fished. With relatively zero growth in the past decade, FAO suggests that a substantial increase in total fisheries catch in the future is very unlikely. Essentially, the same open access feature that has attracted so many people to fishing has also led to a global decline in the number of fish and threatened the health of the sector in the waters of many countries around the world. Moreover, while fisheries production has been on the decline, the number of people fishing and fish farming worldwide has more than doubled, which diminishes the livelihood contribution fisheries can make.

Degraded coastal ecosystems are also a growing concern because they support almost two-thirds of all of the fish harvested worldwide at some stage in their life cycle. The World Resources Institute (WRI) estimates that roughly one-third of the world’s coastal ecosystems are considered to be at high risk and another 17 percent at moderate risk. For example, WRI estimates that 58 percent of the world’s coral reef ecosystems are under threat from a combination of overfishing, coastal development, sedimentation, and other land-based pollution and destructive fishing practices.

In East Asia, 88 percent of the coral reefs are threatened.
The call to end overfishing worldwide

Unfortunately, overfishing and subsequent declining returns from the sector have only reinforced cycles of coastal poverty for millions of rural fishing communities around the world. For this reason, the recent World Summit on Sustainable Development (WSSD) decided that overfishing represented a serious crisis meriting a concerted effort by the international community to restore the world’s fisheries by the year 2015. The participating governments agreed to maintain or restore fish stocks to levels that can produce the maximum sustainable yield by 2015; help developing countries coordinate policies and programs to conserve and sustainably manage fishery resources; and establish representative networks of marine protected areas that are consistent with international law and based on scientific information by 2012.

Creating effective fisheries management regimes in developing countries requires not only resources but also the collaboration and consensus of all stakeholders in the sector. The World Bank will play a central role in building consensus and leveraging the resources needed to do this. Through its capacity for policy dialogue and for investments, the Bank is well-equipped to take the lead in promoting sustainable fisheries. To prepare for this work, the Agriculture and Rural Development Department (ARD) of the World Bank is finalizing an approach paper that will provide guidance to developing countries on strengthening fisheries management and addressing coastal rural poverty. More specifically, the paper will provide a vision for future policy and investment work by the Bank. The approach paper is based in large part on the experience from implementing the Global Trust Fund Program for Sustainable Fisheries in which the Bank has helped several governments—including Eritrea, Guinea-Bissau, Indonesia, and Peru—in various developing countries to plan sector strategies for the sustainable use of their fisheries resources. The Bank is also preparing a partnership program with the Global Environment Facility, other interested donors, and IDA to complement ongoing work on managing large marine ecosystems with country-specific fisheries management programs. These experiences, in conjunction with the approach paper, will help the World Bank respond to the growing global need for sustainable fisheries management.

The future role of the World Bank

The global community needs to strengthen fisheries management on a country-by-country and regional basis in order to meet the WSSD targets. An effective fisheries management policy needs to be capable of restructuring overcapitalized fisheries sectors to sustainable levels and address the issues of equity and poverty of many rural fishers.


2 This rate is compared with a 35 percent increase in the economically active population in agriculture.

3 This initiative includes the coastal ecosystems that support fisheries.

4 The World Bank would like to thank the Government of Japan for financing the Global Trust Fund Program for Sustainable Fisheries.
A Renewed Commitment to Forestry

Forest resources directly contribute to the livelihoods of approximately 90 percent of the 1.2 billion people living in extreme poverty. Forests help maintain soil stability, protect waterflow and quality, regulate global climate change through carbon sequestration, and serve as the repository of most of the Earth’s biodiversity. However, forests continue to be poorly managed and indiscriminately harvested at unsustainable rates. In October 2002, the World Bank approved a new policy on forests and endorsed a strategy that charts the Bank’s re-engagement in the forest sector. The new strategy will contribute to poverty reduction without jeopardizing the environmental values intrinsic to sustainability.

A new forest strategy and operational policy

The 2002 forest strategy and operational policy replace the earlier 1991 forestry strategy and 1993 operational policy, which had constrained the Bank’s engagement in the sector by banning the finance of commercial logging in tropical moist forests. This well-intentioned, “do-no-harm” approach backfired and resulted in a significant decline in the Bank’s engagement in the forest sector throughout the 1990s.

The new strategy and policy represent a more proactive approach to identifying and protecting critical forest conservation areas while supporting improved management in production forests. It is built on three equally important and interdependent goals:

1. harnessing the potential of forests to reduce poverty;
2. integrating forests into sustainable economic development; and
3. protecting vital local and global environmental services and values.

Forests programs and partnership initiatives

The Bank’s implementation plan is based on strong partnerships with other donors, national stakeholders, and NGOs. The Bank is also working in collaboration with the private sector to promote environmentally, socially, and economically sustainable forest management. One example of this is a 2003 Private Sector Investment Forum, structured to promote dialogue between senior executives from forest product companies and financial institutions on creation of an enabling environment for responsible private sector investment in sustainable forestry and forest industry projects.

Forest Governance Program. Crime and corruption in the forest sector are very costly to governments, so the Bank’s Forest Governance Program is designed to promote change in how production forestry is currently practiced. The goal is to contain the negative social, ecological, and economic impacts of poor governance and illegal forestry activities and to improve the process by which concessions are allocated and managed. A key component of the program is the Ministerial Process for Forest Law Enforcement. In September 2001, an East Asian ministerial conference resulted in a declaration that committed participating countries to intensify efforts to address violations of forest law and forest crime.

Program on Forests (PROFOR). PROFOR is a multi-donor partnership that aims to enhance the contribution of forests to poverty alleviation, sustainable development, and protection of environmental values and services through increased knowledge of and creative approaches for sustainable forest management (SFM). PROFOR has facilitated dialogue on institutional reform in the forest sector in the Russian Federation, is supporting an assessment of how forestry law enforcement efforts affects livelihoods, and is analyzing the potential affects of adjustment operations on forests.

Crime and corruption in the forest sector cause annual revenue losses ranging from US$10 billion to US$15 billion from public lands alone.
World Bank/WWF Alliance. The World Bank/WWF Alliance for Forest Conservation and Sustainable Use is a strategic, performance-based, global partnership that works with governments, the private sector, and civil society in support of activities that significantly reduce the loss and degradation of all types of forest worldwide. To achieve this overarching goal, the alliance pursues three targets for the year 2005: 50 million hectares (ha) of new forest protected areas; 50 million ha of highly threatened forest protected areas secured under effective management; and 200 million ha of production forests under independently certified sustainable management.

United Nations Forum on Forests (UNFF) and Collaborative Partnership on Forests (CPF). Through participation in the United Nations Forum on Forests (UNFF) and as an active member in the Collaborative Partnership on Forests (CPF), a group of key international forest-related organizations, the Bank fosters multilateral partnerships and contributes to the international dialogue on forests and agreements. At the third session of the UNFF in May 2003, the World Bank provided the foundation for discussion on economic aspects of forests and will continue follow-up work on identifying the global sources of finance for SFM.

Approaches for implementation at the regional level

The World Bank lends and provides technical assistance in six distinct regions, each of which has different problems and priorities. Therefore, the principles of the strategy will be customized to each region according to its needs:

Africa. Lending in the forests sector in the Africa region has been declining for more than 15 years. New projects will emphasize policies, institutional capacity, and partnerships based on broad consultations with a wide variety of stakeholders.

East Asia and the Pacific (EAP). Forest loss in this area has been more extensive than in most others, and only about 25 percent of the region remains forested. The priority issue in much of the area is poor control and management of the forests concession system, which has resulted in social and environmental problems in many places.

Europe and Central Asia (ECA). Forest cover has been increasing slightly at an average rate of 0.1 percent per year; however, the region is concerned about weakening forest institutions and industries; changes in resource ownership; and a general lack of expertise and training for forest management.

Latin America and the Caribbean (LAC). Forests in this region account for more than one-third of the global forest resources and represent important stores of biodiversity. However, both forest cover and World Bank lending have been decreasing. The Bank has recognized the potential for new investments, especially given the high dependence of poor communities on forest resources.

Middle East and North Africa (MNA). Forests are scarce, covering slightly more than five percent of the land area. These forested areas are, however, critical for watershed protection and landscape preservation. The World Bank is primarily approaching forests by focusing on natural resources management and sustainable rural development as a whole.

Forests in Latin America and the Caribbean account for more than one-third of the global forest resources.
Improved Natural Resource Management:
Sustainable Solutions for Effective Poverty Reduction

Over the past forty years, expanding agricultural production systems have significantly influenced the natural resource base. Approximately 40 percent of the world’s cropland is now degraded, and about 20 million hectares of agricultural land goes out of production due to soil degradation each year. Irrigated agriculture, which today consumes about 70 percent of the total volume of fresh water used by humans, has had major environmental consequences, such as salinization, low water tables, waterlogging, and degraded water quality. Moreover, 20-30 percent of the world’s forests have now been cleared. Rural livelihoods are intricately linked to the conditions of natural resources as their main asset—especially in developing countries and for the 1.3 billion people living on marginal lands.

Why does the World Bank support improved management of natural resources?

Sustainable NRM is critical to reducing poverty on two major fronts. First, NRM must meet the long-term nutritional needs of the global population. If resource degradation continues to erode productive capacity, the ability to satisfy future food needs will be seriously compromised. Inevitably, the poorest will suffer the most through increased food costs and livelihood vulnerability. Second, integrated NRM contributes to poverty reduction by improving the income earning opportunities for poor farmers and their local communities. Improving both the stock and management of natural resources facilitates the transition to production systems that are better matched to the available resources (natural, human, and physical); better able to respond to market signals; and more profitable and sustainable than current resource mining strategies. NRM also expands income and employment opportunities throughout the wider community, as exemplified by eco/agrotourism and increased agroforestry productivity that attracts downstream processing industries. Higher and more stable incomes reduce the livelihood vulnerability associated with the high-risk environment of farming systems based on depleted or degrading resource bases. In addition, agricultural development and improved incomes provide more opportunity for addressing environmental problems in the long term.

Natural resource management (NRM) refers to the processes and practices for the allocation and use of natural resources. Sustainable NRM optimizes the use of natural resources to meet current livelihood needs, while maintaining and improving the stock and quality of natural resources for the benefit of future generations.

By 2025, world population is expected to increase to 7.9 billion. More than 80 percent of these people will live in developing countries. To feed that population, cereal production alone must increase by 52 percent.

What is the World Bank doing?

Prior to the 1980s, most natural resource investments were extractive—timber harvests, fishing, and capturing water for irrigation. In the late 1980s, increased resource scarcity shifted the focus to conservation and sustainable management of natural resources. During this period, the Bank dramatically increased its investments in NRM and forestry; annual investments (including all forestry-related investment) peaked at more than US$1 billion in 1994. These investments have steadily declined since 1998 to approximately US$250 million annually. A new forests strategy that emphasizes sustainable management, an initiative on fisheries and aquaculture, and innovative management practices in irrigation reflect a realignment of goals and an integration of operations that should work to reinvigorate lending for natural resources.
Recent projects are building the organizational, managerial, and technical capacity of local user groups and government to improve resource management. The link between NRM and income-generating investments reflects a recognition that the improvement of NRM requires consideration of the overall sustainability of rural livelihoods and economic systems. As a result, the number of integrated and community-driven projects, especially watershed and micro-watershed projects, is increasing, as is the number of projects that incorporate rural development funds and alternative livelihood options.

Future directions in improved natural resource management requires the integration of sound policy, innovative technical solutions, and development of effective, sustainable local institutions. Technical and institutional capacity building is essential to successfully promote the adoption and implementation of integrated NRM practices.

**The World Bank in action—the Matruh Resource Management Project in Egypt**

Egypt’s poverty rate remains approximately 20-25 percent and is disproportionately concentrated in rural areas. Because poverty is most acute in remote areas like the northwestern Mediterranean coast, natural resources are extremely critical to sustainable livelihoods. The Bedouin people, who make up 85 percent of the population in the area, rely primarily on rainfed agriculture and herding. The First Matruh Resource Management Project (FY1994 – FY2003) sought to conserve water, land, and vegetation resources in the project area, while reducing poverty and improving the local Bedouin people’s quality of life.

The project included water harvesting and watershed management; rangeland and grazing management; demand-driven adaptive research; and extension service and training improvement. The project team used a demand-driven process that worked within the framework of tribal organizations. Matruh successfully constructed 1.2 million cubic meters of water storage facilities, established 250 rangeland management units, and planted fodder trees and shrubs on approximately 5,000 hectares. These investments led to increased income from heartier livestock and more productive crops (see table). Related investments in safe drinking water also contributed to improved health and productivity. Beyond the physical investments, Matruh helped build local capacity for the continued management of natural resources through technical assistance, training, and support for social organization. Overall, the First Matruh Resource Management Project improved the socioeconomic conditions of 10,440 households.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Productivity increase Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>70</td>
</tr>
<tr>
<td>Olives and figs</td>
<td>60</td>
</tr>
<tr>
<td>Vegetables</td>
<td>27</td>
</tr>
</tbody>
</table>
The Private Sector and Markets in Rural Development

The rural private sector includes all for-profit activities acting in rural areas, including micro, small, medium, and large enterprises and the associations and organizations that serve them. The farm, fisheries, and forestry sector, referred to here as “agriculture” is private, and, in fact, most farm and fisheries holdings qualify as micro-enterprises.

What is the function of the rural private sector?

A competitive and innovative private sector and well-functioning markets are critical to rural growth and structural change. The private sector has a direct influence on the well-being of the rural population, providing employment and income to workers and food and other goods and services to consumers.

Market efficiency is becoming more important as the commercialization of agriculture increases in many areas. Competition has increased and competitiveness in national and international markets has become a core issue for national policymakers in the face of market liberalization, the WTO, and globalization.

Efficient agricultural markets provide the basis for capitalizing on market opportunities and benefiting from increased farm productivity, and efficient markets provide households with competitively priced food and other consumer goods and services. They also link small enterprises to markets for inputs, technology, and investment. Enhancing private sector and market development in a way that includes the rural poor presents a key challenge to development efforts.

Improved market efficiency and greater private sector activity are essential to aid the transition from subsistence farming and the production of food staples to more commercialized agricultural systems that produce higher value products—mainly livestock and horticultural products—requiring more inputs, processing, and handling.

How has the role of government changed?

In the 1960s and 1970s, governments in many countries believed that they should play a direct role in input supply, production, trade, transport, and distribution. Government-dominated systems came under criticism in the 1980s and 1990s because of their poor performance. Difficult, lengthy, and sometimes disruptive processes of privatization and liberalization marked the transition to new market-based systems. Although privatization and liberalization were often necessary to stabilize economies and provide a basis for economic growth, in many cases, they did not result in a quick response from private investors. The long legacy of state-controlled and parastatal-managed markets left the institutions and policy frameworks for liberalized and private sector-led markets underdeveloped. The capacity of the private sector in many of these countries was also relatively limited. In response, the World Bank is focusing renewed attention on the political, administrative, economic, and infrastructural conditions necessary for the development of private enterprises in rural areas—the rural investment climate.

What are elements of the rural investment climate?

The rural investment climate encompasses the broad range of policy regimes, regulatory frameworks, and civil and criminal codes that ensure macroeconomic and financial stability and the prevalence of the rule of law. The regulatory framework, in particular, should call for new enterprises to be created freely and for enterprises to trade nationally and internationally without administrative obstacles. The framework should also support standards—such as financial and safety standards—that allow for fair competition. Supportive policies are the product of a transparent system; they enable markets rather than distort them.
The success of any investment in the private sector also depends on the availability and quality of public services, such as, health, education, and infrastructure services. The diverse links between rural areas to proximate urban areas must also be effective and readily available year round.

The investment climate in rural areas frequently presents serious limitations. Rural areas often lack infrastructure, effective local government, and adequate commercial and social services. Product and factor markets do not always function well, and rigidities between regional markets increase the risks associated with doing business and contribute to interregional disparities. When larger enterprises find it too costly or too risky to rely on small farmers and small entrepreneurs for raw material supply, the latter are excluded from market opportunities. When enterprises and financial institutions find it too costly or too risky to provide inputs and services in rural areas, farmers and small entrepreneurs face high costs for adopting modern technologies and find it difficult to increase their productivity and to start new activities. Similarly, employment opportunities become limited, and consumers face high prices and fewer choices for goods from elsewhere. For growth to be pro-poor, the rural poor must be successfully integrated into expanding markets.

Important activities for the rural development agenda

Privatization and market liberalization reforms continue in many countries and, even where they are completed, must be accompanied by a thorough review and reform of public policy relating to private sector and market development. Commercial business development services and project facilities that use matching grants or vouchers can be important institutions to serve needs of local enterprises while simultaneously developing both the capacity of private providers and underdeveloped markets. Independent producer organizations and trade and industry associations are important institutions for dialogue with local government and for serving the individual and collective interests of their members. Finally, bottlenecks in the availability of rural infrastructure services and rural finance services must be prioritized and addressed from the perspectives of the private sector and market development, as well as their direct contribution to the needs of rural households.

The World Bank in action—supporting rural enterprise in Latvia

When Latvia regained independence in 1991, it was left with a highly distorted production structure, dependent on the protected markets of the former Soviet Union (FSU) and unable to compete in world markets. Since then, Latvia successfully implemented a vigorous program of stabilization policies which were complemented by a series of structural measures aimed at a fast transformation of the economy. From the outset, most price and trade regimes were liberalized. These steps were complemented by efforts to restructure the banking system, privatize the economy, and demonopolize large state-owned enterprises. Such measures encouraged the development of the private sector and allowed substantial reorientation of production away from the highly protected and distorted markets of the FSU. The ultimate motivation for Latvia’s reforms in agriculture and other rural aspects was EU accession.

The Rural Development Project (RDP) (FY89-FY02) was designed to help transform Latvia’s agricultural sector to be compatible with EU standards. The program included the investment in institutions necessary to implement policy reforms; the provision of public infrastructure to support private growth both on on- and off-farm; ensuring adequate financing for agriculture and off-farm business development; and the provision of a framework for participatory community development that would empower rural residents while reducing incentives for urban migration.

One key indicator of the project’s success is that the GOL did not need the second phase of the RDP program. It was able to continue the reform efforts with its own funds and with special grants from the EU. The RDP established a rural finance system where none existed in Latvia and created and strengthened agricultural business support systems, such as broad-based agricultural extension. In addition, marketing and distribution support helped create “bankable” projects that were financed under the credit line operation.
## Rural Finance for the Rural Poor

The World Bank’s strategy for rural finance is based on the financial systems approach: Financial services should be comprehensive and include the provision of credit, deposit, and transfer services, as well as other possible demand-driven services. The Bank supports the principle that only commercially viable financial institutions, offering products that are in demand by its customers, will be in a position to reach a large number of people within its market area. Access to financial services, in conjunction with real sector opportunities, will enable the rural poor to pursue economic opportunities, manage risks, and smooth consumption.

### Rural Finance Means Access to Financial Services for Underserved Individuals and Groups

<table>
<thead>
<tr>
<th>Household, farmers, and small businesses in rural areas, with a special focus on the poor.</th>
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</thead>
</table>

### Approach to Rural Finance

The World Bank supports the development of rural financial services through direct and indirect interventions. The Agriculture & Rural Development (ARD) department focuses on creating an enabling environment and increasing the operational capacity of rural financial institutions so that they become commercially viable. Introducing policies that reduce bias against rural areas and provide macroeconomic stability is the first step in creating an enabling environment. Another requisite condition is a legal and regulatory framework that permits a variety of institutions to flourish and that facilitates banking transactions and contract enforcement. In addition, governments need to provide support to financial-market infrastructure, such as banking associations, training institutions, and credit bureaus. The Bank and its partners are developing new demand-driven products that respond to the particular needs of rural customers. Facilitating access to sustainable sources of refinancing, such as savings mobilization, and linkages to commercial sources of funding are also major components of the Bank’s rural finance approach.

### Going Forward

The World Bank recognizes that rural finance has an important role in rural development. Knowledge development and sharing within the Bank and with other institutional players in the rural finance sector will be essential in the future. The Bank expects to work with a variety of institutional arrangements and methods and will support the development of new finance mechanisms adapted to the rural context, including microfinance institutions that are slowly but increasingly moving into rural areas; reformed or privatized state banks that have a large outreach in rural areas and follow a private sector approach; community-owned organizations ranging from informal community groups and small local cooperatives to complete systems of credit and savings unions; and input suppliers, processors, and traders that have not been a focus of development assistance efforts even though they have been playing a significant role in financing for agriculture in certain areas.

### The World Bank in Action—Access to Credit for Rural People in Vietnam

Vietnam’s society is predominantly agrarian, and its traditions are based on the production and distribution of rice. In 1992, 51 percent of the people living in this agrarian society were in absolute poverty. The Bank poverty report *Vietnam: Poverty Assessment and Strategy* of January 1999 found that approximately 80 percent of the population of more than 73 million people lived in rural areas, 70 percent of which relied on farming exclusively for subsistence. Another 20 percent depended on a mix of farming and non-farm employment. Nearly 50 percent of children under the age of five suffered from malnutrition because the average farm was simply too small to support the average family. Finally, the incidence of poverty in rural areas was 57 percent—more than twice that of urban areas.

At the onset of the Rural Finance Project (FY96-FY01), agriculture contributed 36 percent to GDP. The project
sought to assist Vietnam in its efforts to improve living conditions in rural areas by encouraging private sector investments, strengthening the banking system’s capacity to finance private sector investments, and increasing access of the rural poor to financial services.

A study of the projects showed positive socioeconomic impacts in terms of outreach to a large number of household borrowers, and the income of household borrowers increased remarkably. The project also used an innovative approach—mobile banking—to achieve greater outreach. About 10 percent of project funds supported small and medium enterprises (SMEs), which were able to expand their business operations and create about 3,000 new jobs. The participating banks that were able to expand their lending operations, particularly for financing medium- and long-term investments, also improved the capacity of their staff through the project’s training program and improved their financial performance by implementing the institutional development plan (IDP), which was initiated under the project.

**Mobile Banking Operation**

A special feature of the Rural Finance project is mobile banking, which uses specially equipped vehicles to provide banking services to remote areas without bank branches. The project financed 159 vehicles for mobile banking units, which generally have three staff. Experience so far indicates that, each month on average, one mobile banking unit:

- mobilized about 2,000 deposit accounts with total amount of VND19 billion (equal to about US$1.2 million);
- released about 1,900 loans with total amount of about VNS 15 billion (equal to US$1 million); and
- collected about 1,400 loan repayments with total amount of about VND 10 billion (equal to US$650,000).

The operations have been profitable and generate net income before taxes—after provisions, car maintenance, cost of funds, and operating costs—of about US$1,000 a month (the price of one vehicle was equal to US$ 22,000).
Rural Infrastructure Services for People and Businesses

Rural infrastructure services (RIS) are critical for everyday survival and for linking villages to small towns and markets. The provision of RIS, here taken to include energy, information and communications technology (ICT), transport, and water and sanitation, must engage communities in deciding the types of services they want, as well as how much they can and are willing to pay for them. The participatory process, when managed well, for planning, implementing, and operating and maintaining community-level infrastructure services, helps communities organize and build local capacity for collective action.

Demand for infrastructure services in rural areas is not limited to the village level. District requirements, such as tertiary roads and electrification, require involvement of local governments and private suppliers. The availability of reliable and affordable infrastructure services is essential to the development of both agriculture and the non-farm sector.

Is there a problem?

Service gaps in developing countries are enormous, especially in rural areas where people have significantly less infrastructure available to them than people in urban areas. An average of 31 percent of rural households lack access to improved water; the gap in coverage is 45 percent in the least developed countries (http://www.childinfo.org/eddb/water/trends.htm). Approximately 700 million rural people live more than two kilometers from an all-season road; in rural sub-Saharan Africa, women spend an average of five hours each day on transport just meeting subsistence needs of their household. A review of 15 countries that examined average access to infrastructure services reported notable differences between urban and rural areas regarding the availability of infrastructure: 89 percent of the people living in cities had access to electricity while only 46 percent of rural people had telephones—only 8 percent compared with 38 percent of households in urban areas. These differences in service are representative of most regions (Whittington, et al, 2001).2

In order to meet the Millennium Development Goals, approximately 500 million rural people must gain access to safe water and 900,000 people to basic sanitation between 2000 and 2015 (http://www.childinfo.org/eddb/water/trends.htm). Extending the supply of RIS faces the challenges of low density of demand and high unit costs. Based on relative costs of provisioning, however, the imbalances between rural and urban service levels still seem unwarranted (Lanjouw and Feder, 2001). Technology advances and innovative partnerships between the private and public sector and communities continuously expand the opportunities available for delivering infrastructure services to remote rural communities.

Faced with these challenges, what options to rural households have? They either self-provide drinking water and fuel wood—often at very high costs, particularly for women and girls; or they remain without a particular service, such as going to health facilities for preventive care. Ramifications include unacceptably high child and maternal mortality rates due to unsafe water, poor sanitation, and lack of transport; low levels of literacy and school attendance rates, particularly among girls; low incomes caused by high transport costs and difficulty in reaching markets; and overall isolation and strain on social networks caused by lack of communication.

What is the World Bank doing?

The Bank’s strategy for rural development recognizes the critical relationships between RIS and the farm and non-farm economy, human well-being, and sustainable livelihoods (World Bank, 2003). This strategy commits the Bank to providing enhanced support to clients in their efforts to increase the quality and quantity of RIS. The Bank has a large and
expanding portfolio in RIS: In 2002, roughly every three out of four new projects in rural space included RIS—an increase from 46 percent in 2001. Lending amounts for new RIS projects in both 2001 and 2002 was US$1.7 billion. This figure, however, is an underestimate: Because many projects are menu-based, it is often impossible to determine ex ante the amount allocated to RIS.¹

Almost all of the projects in the Bank’s portfolio are multisectoral. There is also an increasing trend—54 percent in 2001 and 68 percent in 2002—toward provision of more than one infrastructure service within a project. Larger investments at the district and provincial levels increasingly recognize the linkages and potential synergies between, for example, the energy and water sector or between energy and ICT.

Challenges facing developing countries and the Bank include the absence of clear policies and strategies for managing and financing RIS and tendencies toward piecemeal approaches with inadequate attention to sustainability (especially maintenance requirements) and replicability (scaling up for national coverage).

Proposed actions

How do we attain universal access by rural households, including very poor people, to infrastructure services that are safe and affordable? There is no easy solution, in part, because RIS are highly heterogeneous: Implementing and operating village water supply requires different managerial and financial resources than maintaining a district road or operating a bus. In addition, programs that improve the quality and quantity of infrastructure services available to rural communities have to strike the right balance between a set of frequently competing objectives—efficiency, sustainability, replicability, and poverty reduction. There are tradeoffs between these objectives: For example, sustainability and replicability call for high cost recovery and self-reliance at the community and local government level, while the poverty reduction objective may require subsidies for capital and recurrent expenditures. These tradeoffs must be assessed in both country and local context and require a minimum level of data on service coverage, quality, and costs. This data is rarely available and is a “software” area that requires donor support. The provision of physical infrastructure, “hardware,” without attention to critical policy issues risks having narrow and unsustainable impact.

The Bank’s rural development strategy commits the institution to support the development of sound sector policies, promote decentralized institutional arrangements and participatory and demand-driven approaches, facilitate private sector involvement in RIS production and financing, ensure the accountability to users, and encourage user contributions and cost recovery while balancing poverty reduction objectives. International and local partnerships are essential to meet the enormous demand for infrastructure services by rural people and businesses in developing countries.

¹ There is a whole range of large-scale infrastructure services required for rural development involving the operation of efficient logistics chains, including market depots, highways, rail, ports, and customs. This note, however, focuses on local infrastructure services for rural households and businesses.

² An exception is the provision of electricity in Eastern European and Central Asian countries, where urban and rural households have equal coverage.

³ It was not possible to determine the lending amounts to RIS for 22 percent of projects in 2002.


Sustainable Agriculture: Effective Rural Poverty Reduction in an Environmentally and Socially Sound Manner

By 2025, global population will likely increase to 7.9 billion, and more than 80 percent of the population will live in developing countries. Rapid population growth combined with rising average incomes will boost the demand for food and fiber. According to a projection by the International Food Policy Research Institute (IFPRI), cereal demand will grow by 46 percent worldwide and by 65 percent in developing countries. Increased resource scarcity will require significant improvements in agricultural productivity on existing agricultural lands. The rehabilitation and intensified use of several hundred million hectares (ha) of degraded lands worldwide will be essential for sustainable agricultural intensification and enhanced food and fiber productivity.

Why does the World Bank support sustainable intensification of agriculture?

Agricultural intensification increases the productivity of existing land and water resources in the production of food and cash crops, livestock, forestry, and aquaculture. Although frequently associated with increased use of external inputs, intensification is more accurately an increase in the efficiency of the use of production inputs. Intensification achieves higher levels of productivity because of integrated planning and resource management at the landscape, watershed, and farm scales, as well as greater labor efficiency and the use of improved varieties and breeds.

Intensification of production systems is only successful if the systems are sustainable and provide for the needs of today’s society without compromising the needs of future generations. Land, water, plant, and animal genetic resources must be conserved to achieve sustainable development in the agriculture, forestry, and fisheries sectors. Sustainable agricultural intensification investments are particularly relevant to the poor in developing countries, where poverty, agricultural productivity, and resource degradation are interrelated and heavily influenced by the pressures that the growing population puts on the natural resource base. In addition, poverty often demands resource mining, a practice that results in the loss of biodiversity, soil degradation, and reduced water quality and availability, further reducing future agricultural production potential. Intensified and sustainable production systems are environmentally beneficial, technically appropriate, economically viable, and socially sound.

What is the World Bank doing?

Commodity-focused investments in the 1970s and 1980s supported monocropping and the expansion of a single dominant technology or production system. New investments since the mid-1990s have been based on a more holistic understanding of the underlying social, economic, and environmental elements of sustainability. These recent Bank investments have focused mainly on the production of high-value commodities, conservation tillage, and integrated pest management (IPM).

reflecting weaknesses in technical analysis, as well as in the project preparation and appraisal processes. Since agricultural intensification represents a key strategy for achieving the goals of rural poverty reduction and environmental conservation, there is an urgent need to expand lending in this area.

Future investments are likely to support more diverse products and production systems and will include less favorable production regions. Applying modern science and new marketing techniques will help farmers move into more productive and sustainable production systems. To enhance both the productivity and resilience of agricultural landscapes, future projects must also address the rehabilitation of degraded agricultural and pasture lands; intensified but integrated crop, tree, and livestock systems; aquaculture production systems; and the application of biotechnology to production system intensification. Increased technical expertise within donor organizations will facilitate sound planning for investments in the intensification of production systems and will increase the likelihood of the sustainability of these systems.

The World Bank in action—reclaiming sodic lands in India

The state of Uttar Pradesh in India has approximately 17 million ha under cultivation and produces nearly 20 percent of India’s food grains. The declining productivity of food grains like rice and wheat, a result of water-induced land degradation (salinization, sodification, and groundwater depletion) and loss of soil fertility, has become a major concern in the state. The first Uttar Pradesh Sodic Lands Reclamation Project (Sodic I, 1994 – 2001) developed procedures for large-scale reclamation of sodic lands to achieve the objectives of poverty reduction, environmental protection, and improved agricultural production. The project design was based on increased participation of affected farmers, the decentralized management of activities, and by linking research and technology specialists to farmers.

Sodic I brought approximately 64,000 ha under green cover for the first time. Successful land reclamation has resulted in an incremental paddy and wheat production of 1.54 and 1.56 million tons respectively. Yields of rice and wheat doubled original project estimates; land values increased by a factor of four; wage rates doubled. By the end of Sodic I, cropping intensity had increased from 62 percent to 222 percent, wheat and rice yields had reached 2.7 and 3.0 tonnes/ha respectively, and more than one million people had directly benefited from project activities. A follow-on project, Sodic II (1999 –2006), will use the approaches tested in Sodic I to increase agricultural productivity in 10 districts of Uttar Pradesh.