

Regional and global goods

The UN Millennium Project's core operational recommendation is for the Millennium Development Goals to be implemented at the country level through MDG-based poverty reduction strategies. But for many developing countries the Goals cannot be achieved solely through country-level investments, debt relief, and trade reform. They also require increased investments in regional and global public goods. At the regional level, countries must build cross-country infrastructure, curb pollution, strengthen the management of transboundary ecosystems, and enhance economic and political integration. At the global level the research community must be mobilized to address the specific problems facing developing countries—particularly for health and agriculture in the tropics and subtropics. Other global investments critical for achieving the Millennium Development Goals include efforts to mitigate climate change, protect global fisheries, and maintain biodiversity.

Regional goods

Regional public goods are generally overlooked and underprovided in most parts of the developing world, despite their critical role in promoting development. A country's immediate neighbors tend to be among its most important trading partners. These economic ties can be strengthened through regional cooperation—critical for economic growth and poverty reduction when an economy is landlocked, a small island state, or dependent on neighbors for vital resources, such as food, water, or energy. Regional integration is even more important for countries with very small populations, which must rely on regional rather than national markets to enjoy economies of scale and scope in industry, public administration, and research and development.

Further, the management of transboundary watersheds, desertification, and biodiversity can be addressed only through regional strategies integrated

with national plans of action. And since many local conflicts have repercussions on entire regions or are driven by regional tensions, conflict management requires greater regional cooperation to detect conflicts before they erupt and to develop coordinated responses from neighboring countries to end them.

We therefore recommend that the provision of four types of regional goods be supported internationally and integrated into national MDG-based poverty reduction strategies:

- Infrastructure for transport, energy, and water management.
- Coordination mechanisms to manage transboundary environmental issues.
- Institutions to promote economic cooperation, including coordination and harmonization in trade policies and procedures.
- Political cooperation mechanisms for regional dialogue and consensus building, as exemplified by the African Peer Review Mechanism.

Regional infrastructure

Infrastructure for transport, energy, and water resource management underpins economic development. Many countries—particularly those isolated from world markets, such as the landlocked nations in Africa, Central Asia, and Latin America—require investments in transport infrastructure to integrate them more closely with the rest of the world. Rwanda, for instance, can make tremendous investments in its road infrastructure, but the economic returns to those investments will be limited unless Uganda, Kenya, Burundi, and Tanzania make similar investments to facilitate transport to the international shipping ports of Mombasa, Kenya, or Dar-es-Salaam, Tanzania. Economic prospects in Kyrgyzstan, Lao People's Democratic Republic, Paraguay, and Tajikistan, among others, also depend on improved transport infrastructure in neighboring countries for vital access to international trade routes.

As discussed in chapter 10, perhaps nowhere are MDG investment needs for regional transport infrastructure greater than in Africa. Much of the continent's transport infrastructure was designed in the colonial era to transport minerals and other natural resources directly to the nearest port, with virtually no infrastructure to connect African countries. Decades of insufficient maintenance and underinvestment have left transport networks across the continent in extremely poor condition, with an estimated 25 percent of the Trans-African Highway delapidated to the point where it no longer meets design standards (UNECA 2004). The resulting transport costs, several times higher than in other regions, take a tremendous toll on economic development by raising the cost of key economic inputs, such as fertilizers and fuel.

Poor cross-border infrastructure for the transmission of electricity and fossil fuels is another constraint on development (EIA 1999). By connecting national electricity grids and developing subregional electricity pools, countries can share cheap sources of energy—such as the largely untapped potential for

hydropower in Africa and parts of Central Asia—reducing costs and increasing reliability. Regional infrastructure investments are also needed to transport fuel. Important examples are the West African gas pipeline, the Baku–Tbilisi pipeline, and an outlet to an international shipping port allowing Bolivia to export its natural gas. The joint development of infrastructure for water management, such as dams, aqueducts, and canals, presents another investment priority.

Regional management of the environment

Many environmental problems require regional solutions. For instance, the Mekong River and the Nile Basin initiatives have improved the multicountry management of transboundary rivers and watersheds. Another promising example is the Amazon Cooperation Treaty, to develop a joint management strategy for the Amazon Basin among all riparian countries. Other major environmental challenges in need of concerted regional responses are combating desertification, managing coastal and freshwater fisheries, and reducing the pollution of air and water. For example, halting the eutrophication of Africa's Lake Victoria will be possible only if Kenya, Tanzania, and Uganda cooperate to reduce nutrient loads in the lake. The Global Environment Facility, which specializes in the financing of regional and global environment strategies, requires more funding to support such regional initiatives in developing countries.

Economic cooperation

Countries need to promote regional economic cooperation to overcome the constraints of small market size and to reap the full benefits of economic specialization. Since developing countries tend to export more to distant developed countries than to developing countries (World Bank 2001), the potential for regional integration among developing countries is tremendous.¹ To promote intraregional trade, countries should continue to reduce tariffs and invest in trade facilitation by simplifying and automating customs procedures, promoting the mutual recognition of standards, and encouraging trade in services (chapter 14). In some cases regional currency unions can further aid intraregional trade by reducing the cost of exchange rate fluctuations and further deepening economic integration.

A second dimension of regional economic cooperation focuses on sharing the high fixed costs of setting up key institutions for development. Universities, research centers, and standards bodies are critical for generating growth, but frequently impossible for small countries to afford. Botswana, for example, despite having one of the highest per capita incomes in Africa, does not have a medical school to train doctors to fight the HIV/AIDS pandemic, since it has a population of only 1.5 million people. Many small island developing states also require regional institutions to help them overcome the constraints of small markets and population.

Third, the example of the European Union, which speaks with one voice in international negotiations over trade, shows that regional economic cooperation can strengthen the international voice of developing countries. By agreeing on common positions and objectives, small countries can reduce the cost of international negotiations and increase the likelihood of successful outcomes on issues like trade and debt relief.

These priorities require strong institutions to coordinate the alignment of customs procedures, the harmonization of standards, and the development of joint infrastructure. Examples are the Association of Southeast Asian Nations (ASEAN), which has been successful at promoting economic cooperation in Southeast Asia, the Caribbean Community (CARICOM) in the Caribbean, the South American Community of Nations in Latin America, and the regional economic commissions in Africa, such as the Economic Community of West African States (ECOWAS) and the Southern African Development Community (SADC).

Political cooperation

Countries can strengthen national policies and promote good governance through regional cooperation. The New Partnership for Africa's Development (NEPAD) has established voluntary procedures for member countries to identify means of strengthening their institutions and policies through the African Peer Review Mechanism. It provides an important new forum for countries to exchange experiences and assist each other in improving their policy environments.

Regional political cooperation can further promote regional peace and security by implementing the recommendations in chapters 7 and 12. Sources of finance for conflict can be cut off through such regional initiatives as the Kimberly Process Certification Scheme. ECOWAS and SADC have helped prevent and end regional conflicts through their peacekeeping activities. Their example should be followed in other regions prone to conflict, but this will require increased training for peacekeepers and support for their missions.

Why are regional goods and integration underfunded?

Birdsall (2004) estimates that only approximately \$2 billion of the \$65 billion (in 2003 dollars) in official development assistance in 2002 financed regional collaboration and infrastructure. Even for global public goods, where developed countries stand to benefit directly, financing remains dramatically insufficient (Kaul and others 2003).

Birdsall cites two main reasons. First, the cost of coordination among different countries is extremely high, requiring strong regional institutions that do not exist in most parts of the developing world. Many governments in low-income countries are so understaffed and underresourced that they cannot afford to allocate the staff necessary to ensure effective coordination with their neighbors.

Second, the attribution of responsibility is a problem. This relates more to the way donors operate. Bilateral and multilateral agencies tend to allocate funds on the basis of individual country performance and needs—a difficult metric in the case of regional goods. In addition, donors often expect a recipient country to guarantee loan repayments. This approach does not work for regional investments since it is extremely difficult to assign the investment benefit to individual countries. As a result, it becomes nearly impossible to obtain loan guarantees for regional projects from individual countries. To overcome similar problems, regional infrastructure projects in the European Union are justified by their benefits to the entire community and financed from the EU's core budget. Comparable mechanisms could be established among developing countries.

Strengthening the provision of regional goods

How can the provision of regional goods, such as infrastructure, improved environmental management, or economic integration, be improved? Our recommendations focus on two main areas: strengthening regional organizations and making more funding available for regional infrastructure.

Dedicated regional institutions are needed to provide regional public goods and improve coordination among member countries. They must have a clear mandate, be properly staffed and resourced, and be clearly aligned with member countries' national poverty reduction strategies. In most developing regions today this is not the case. To finance necessary investments, organizations like the African Union, CARICOM, and NEPAD urgently require more funding through dedicated or “ring-fenced” sources of financing, such as customs duties, and official development assistance where necessary. Adequate funding must be available to fund the operating costs of organizations in addition to the specific projects that receive most attention today.

Competing responsibilities among regional organizations must be resolved to avoid any unnecessary duplication of effort. While different organizations within one region may provide different regional goods, their mandates must be clearly delineated—not only among them, but also with respect to the national governments of their member states, which will need to gradually transfer some sovereign responsibilities to them.

Direct funding for regional infrastructure must increase substantially. Where regional infrastructure strategies exist, they are often not implemented due to a lack of funding. NEPAD has estimated that more than \$8 billion will be required to fund its priority infrastructure investments, eight times the \$950 million in total funding for NEPAD-related activities provided by the African Development Bank and the World Bank from 2001 to 2004 (Nduru 2004). Since it can be nearly impossible to receive loan guarantees for regional infrastructure projects from individual countries, the bulk of funding for regional infrastructure critical to achieving the Goals will need to be provided

to regional organizations in the form of grants. For this, the concessional financing windows of the World Bank and the regional development banks must increase substantially.² Bilateral donors must also increase their financing of regional infrastructure projects. As described in chapter 17, the UN Millennium Project estimates that official development assistance for regional infrastructure will need to rise from \$2 billion in 2002 to \$11 billion by 2015.

Global goods

Some global responses are required to support countries in achieving the Goals—such as mobilizing global science and technology, curbing climate change, and fighting the degradation of the environment.

Mobilizing global science and technology for the MDGs

Many developing countries need new technologies to address specific needs. There are realistic prospects for developing new vaccines and medicines for malaria, HIV/AIDS, TB, and other killer diseases in poor countries. Improved agricultural varieties and cropping systems can increase the food productivity of rainfed agriculture. Accurate environmental monitoring and forecasting can help focus interventions for the greatest positive impact. Better microbicides and contraceptives can improve sexual and reproductive health for the poor. Many other examples abound for such public goods that, once developed, should be shared broadly to help all countries achieve the Goals.

The international science community—led by national research laboratories, universities, and national academies of science—must play a critical role in developing the global public goods to overcome these constraints. It must bring to bear its tremendous research capabilities to help solve the tough problems facing developing countries—particularly in the tropics.

Global research into areas critical to developing countries, despite several efforts, remains underfunded. The annual operating budget of \$400 million for the worldwide network of 15 tropical agricultural research centers known as the Consultative Group on International Agricultural Research (CGIAR) is small in comparison with the combined research and development (R&D) budgets of the world's six largest agrobiotech companies, estimated at roughly \$3 billion a year (Evenson 2003). The CGIAR specifically focuses on increasing the agricultural productivity of the poorest rural farmers in the tropics. It has had outstanding success in helping achieve major gains in food security in many parts of the tropical world, particularly in fostering the Green Revolution in Asia. The low budgets of the CGIAR system and national agricultural research centers continue despite considerable evidence of the high social rates of return from R&D on tropical food production.

Likewise, health R&D is limited for diseases affecting the poor, with only 10 percent of global funding used for research into 90 percent of the world's health problems (Global Forum for Health Research 2002). The WHO's

Commission on Macroeconomics and Health recommends that annual funding for R&D on global public goods in health (malaria, AIDS, TB, and nutrition, among other priorities) should be increased to \$3 billion by 2007 and \$4 billion by 2015, compared with roughly \$300 million annually today (WHO 2001). The situation is similar in other areas critical to the needs of poor people. Low-cost sanitation technologies adapted to local cultural preferences, ability to pay, and environmental constraints are notoriously underresearched across the developing world.

Two reasons account for the inattention of global science to the needs of poor countries. First, public investments in research targeted at the needs of the tropics or other developing regions are insufficient due to the resource constraints in developing countries. Second, while private markets in developed countries can produce development-stage science and, to a lesser extent, research-stage science, this is not so in poor countries. No adequate incentives exist for private research to focus on tropical diseases or subsistence and small-scale agriculture, since the poor would be unable to pay for the new medicines, improved plant varieties, or farming techniques. There is simply no commercially attractive market for such products.

These shortcomings have been understood for some time, but the international system has so far not responded adequately. Private research could be mobilized through three tested coordinating mechanisms.

- Ex post prizes have been used frequently to spur innovation. An impressive example, though not related to the MDGs, is the Ansari X Prize, recently awarded for the first commercial flight into space. Similar prizes should be offered for well defined problems, such as developing a new type of vaccine or an improved crop variety (Masters 2002).
- Direct funding of private research has been used successfully by several private foundations, such as the Rockefeller Foundation and the Bill and Melinda Gates Foundation, to promote development-stage research in public health and agriculture. Recently, the privately funded Malaria Vaccine Initiative announced the successful completion of phase 2 of clinical trials for a new malaria vaccine developed jointly with GlaxoSmithKline Biologicals, in partnership with Mozambique's Ministry of Health and the Centro de Investigação em Saude da Manhica.
- Precommitment purchase agreements, as proposed by Kremer (2002), consist of binding public commitments to buy a product, such as a vaccine against hepatitis, at a minimum price. They enable private companies to plan for a minimum production level, thus removing an important element of risk in the development of product-stage research or in the bulk production of vaccines. The Global Alliance for Vaccines and Immunization (GAVI) and the Vaccine Fund are putting this principle into operation.

In addition to mobilizing private research for the Goals, international donors and foundations need to support more public research on the specific challenges facing developing countries. A preliminary estimate suggests that at least \$7 billion a year will be required by 2015 (chapter 17). In addition to the \$4 billion for public health research, \$1 billion would go toward agriculture, nutrition, and improved natural resource management—by more than doubling the current budget of the CGIAR. Roughly another \$1 billion is needed for research toward improved energy technologies. And perhaps \$1 billion is needed for greater understanding of interannual, seasonal, and long-term climate change. Improved climate modeling and forecasting tools can help predict changes in precipitation patterns to improve the management of water reservoirs and help farmers adapt their cropping and irrigation techniques accordingly. It can also help improve management of responses to natural disasters.

An international response to climate change

Climate change is a major development issue that needs to be addressed urgently. Unless global warming slows down, the incidence of droughts and floods will likely increase, vector-borne diseases will probably expand their reach, and many ecosystems, such as mangroves and coral reefs, will likely be put under great strain. In short, achievements in the fight against disease, hunger, poverty, and environmental degradation risk being unraveled by climate change (IPCC 2001a–c).

Although, encouragingly, the Kyoto Protocol is now in force, the international response to the gathering threat of climate change has so far been inadequate. Despite the signing of the Protocol, global emissions of greenhouse gases continue to rise. It is therefore necessary that additional measures be implemented to stabilize greenhouse gas concentrations in the atmosphere in the near future. As agreed at Johannesburg, primary responsibility for mitigating climate change and other unsustainable patterns of production and consumption, such as the overharvesting of global fisheries, must lie with the countries that cause the problems—that is, the rich and some of the rapidly growing middle-income countries.³ The details of how to mitigate climate change go beyond the scope and mandate of the UN Millennium Project. But we stress that urgent action is necessary to agree on binding reductions in the global emissions of greenhouse gases (UN Millennium Project 2005c).