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United Nations Development Programme

CASE STUDIES OF
SUSTAINABLE DEVELOPMENT IN PRACTICE

TRIPLE WINS FOR SUSTAINABLE DEVELOPMENT

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United Nations Development Programme
June 2012

Design and production: Kimberly Koserowski, First Kiss Creative LLC

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Foreword

Sustainable development is synonymous in the minds of many with the colour green—and for good reason. Twenty years ago at the first Earth Summit in Rio de Janeiro, leaders set out what today is conventional wisdom: human progress—both social and economic—cannot be divorced from environmental protection. Unless both are advanced together, both will flounder or fail.

Sustainable development is as much about health, education, and jobs, as it is about ecosystems. It is about ever widening inclusion and movement away from decisions that erode democratic space and do not address social inequality, intolerance, and violence. Sustainable development is about change that transforms impoverished peoples, communities, and countries into informed, educated, healthy and productive societies. It is about wealth creation that generates equality and opportunity; it is about consumption and production patterns that respect planetary boundaries; it is about increasing tolerance and respect for human rights.

Building on the human development legacy that originated with Amartya Sen and Mahbub Ul Haq and was captured by the first Human Development Report in 1990, UNDP has long promoted alternative approaches to measuring human progress, including with the Human Development Index. Today, we are building on this legacy by exploring how to adjust the index to reflect environmental sustainability, so that governments and citizens might better track real progress towards truly sustainable development. This must be our collective objective.

As countries prepare for the 'Rio+20' United Nations Conference on Sustainable Development, UNDP is pleased to share this report. After suggesting what it takes to move towards sustainable development, the report sets out national examples of progress toward sustainable development, from developing countries like Nepal and Niger, as well as emerging economies like South Africa and Croatia. These examples show how social, environmental, and economic progress can be integrated to make a more sustainable future. They illustrate what the future of development programming should look like.

Instead of focusing on the tradeoffs between the three strands of development, this report highlights the range and significance of the complementarities between them. It describes 'triple win' development policies and programming that regenerate the global commons by integrating social development with economic growth and environmental sustainability.

UNDP invites policy-makers and practitioners preparing for 'Rio+20' to consider this report as a contribution to the debate on how to make sustainable development happen.

As is our underlying mission, UNDP will continue to support countries in translating the principles of sustainable development into practice in the 177 countries and territories in which we work—empowering lives and advancing resilient nations—and to share their experiences for the benefit of others.

Olav Kjørven
Director, UNDP Bureau for Development Policy
March 2012

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Introduction: the three strands of sustainable development

"We all aspire to reach better living conditions. Yet, this will not be possible by following the current growth model . . . We need a practical twenty-first century development model that connects the dots between the key issues of our time: poverty reduction; job generation; inequality; climate change; environmental stress; water, energy and food security."

UN Secretary General Ban Ki-moon

Development is not just about growth. Likewise, sustainability is not just about protecting the environment. Both development and sustainability are primarily about people living in peace with each other and in equilibrium with the planet. Their rights, opportunities, choices, dignity and values are (or should be) at the centre of everything.

Sustainable development is about meeting the needs of people today without compromising the ability of future generations to meet their needs. Inter-generational equity—avoiding the unjustified transfer of development risks from present to future generations, without sacrificing reductions in poverty and inequality today at the altar of future environmental concerns—is implicit in this approach to development.

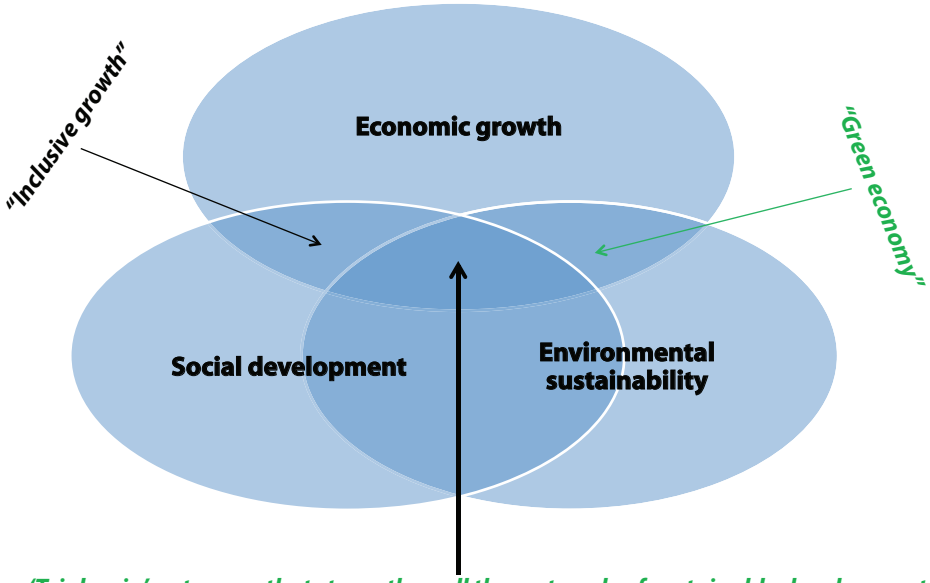
Current patterns of consumption and production risk breaching planetary boundaries. If the natural environment undergoes significant degradation, so too does the potential to improve people's lives—both in this and subsequent generations. This is especially true for the world's poorest—most of whom rely directly upon nature for their livelihoods, and whose prospects are therefore most directly affected by the threats to ecosystems.

Unless issues of equity and sustainability are properly addressed, current development trajectories could grind to a halt, or even go into reverse. Avoiding such outcomes will be the great challenge of the 21st century.

The report suggests six key principles that are needed to recalibrate the global development agenda. It then uses country case studies that describe policy measures, programmes, and efforts that can support a more robust and sustainable human development model. This method is used to illustrate examples of enlarging people's freedoms and opportunities that can be achieved while safeguarding the natural environment for future generations. It also suggests that sustainable development requires that its economic, social, and environmental 'pillars' be thought of as synergistic and integrated 'strands' that lend themselves to inter-weaving and linkages.

This publication is devoted to development policy and practice as the art and craft of weaving these strands together, in order to make sustainable development real. It looks at the 'how' of sustainable development. It considers what can happen when ***green growth***—the nexus of the 'economic' and 'environmental' strands of sustainable development—is combined with ***inclusive growth***—the nexus of the 'economic' and 'social' strands (Figure 1). This report provides concrete examples of policies, programmes, and projects from different

Figure 1—Sustainable development and 'triple wins'



countries and sectors that are restoring the global environmental commons while also providing employment, energy, and other basic services to vulnerable people, and building resilience in vulnerable communities, whose legitimate development aspirations must not go unmet. It is by expanding these programmes and policies that 'triple wins' can be achieved—and significant progress can be made in developing green economies, and more sustainable production and consumption patterns.

A four-step algorithm for pursuing or expanding triple-win programming is presented in Box 1 below. It emphasizes:

1) Identifying opportunities for triple-win programming, and specific activities that can be engaged to capture these opportunities;

2) Defining barriers to the effective implementation of these activities—and therefore efforts to remove these barriers;

3) Making broader policy environments more conducive for triple win activities; and

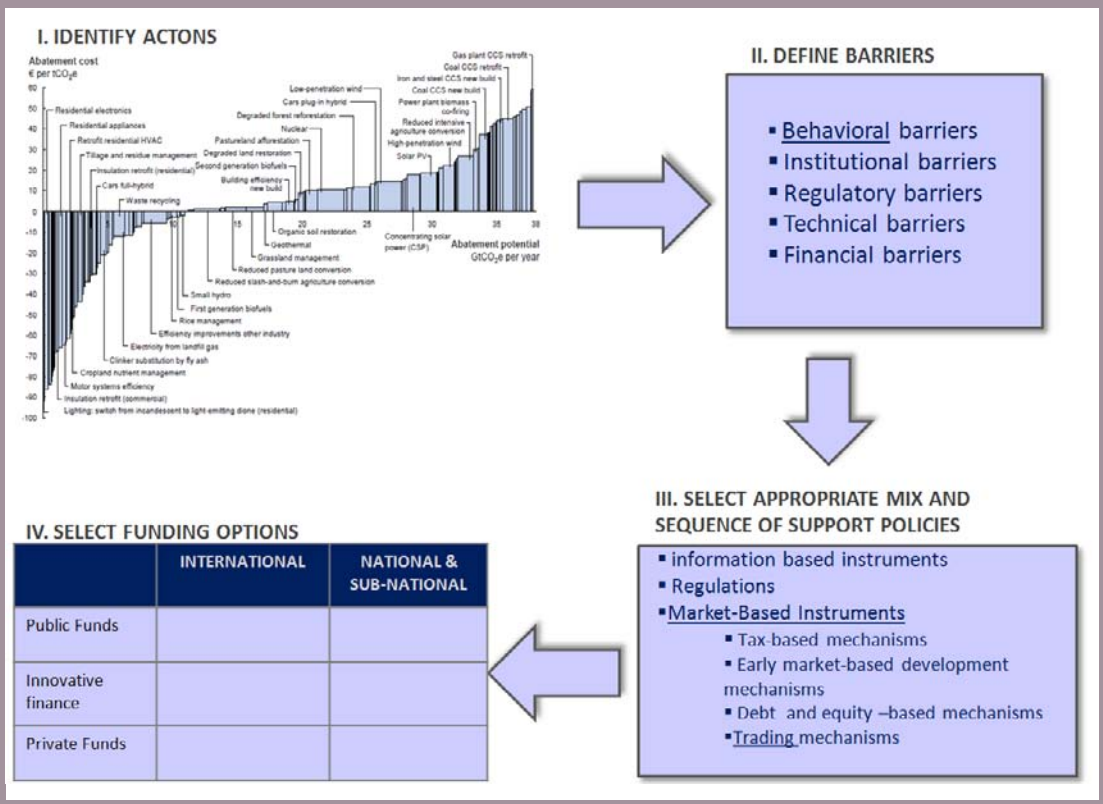
4) Selecting appropriate financing options.

Sustainable development since 1990: where are we now?

In 1992, world leaders gathered for the first Earth Summit in Rio de Janeiro and agreed on the 'Rio principles' (Box 2), which recognized the importance of integration across the environmental, social, and economic strands of sustainable development. However, the modern day story of sustainable development started in earnest two years earlier.

"People are the wealth of nations"—so began UNDP's first Human Development Report in 1990. This was a groundbreaking step. The concept of human development was born, defined as a process of enlarging people's choices to lead lives they value. The 1990 Human Development Report also launched the Human Development Index. Designed to move beyond the traditional GDP measure to assess the state of human well-being, the Human Development Index incorporated indicators for a long and healthy life, knowledge, and a decent standard of living.

Box 1: Making triple-win programming happen, in four steps



Box 2: The "Rio Principles"—What do they say?

- Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature. (Principle 1)
- The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations. (Principle 3)
- The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority . . . In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command . . . Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries. (Principles 6, 7, 11)
- . . . States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies. (Principle 8)
- Environmental issues are best handled with participation of all concerned citizens . . . each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided. (Principle 10)
- States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. (Principle 12)
- In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. (Principle 15)
- National authorities should endeavor to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment. (Principle 16)
- Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development . . . The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all . . . Indigenous people and their communities and other local communities have a vital role in environmental management and development because of their knowledge and traditional practices. (Principles 20, 21, 22)

Ten years later in 2000, building on a decade of major United Nations conferences and summits, world leaders adopted the United Nations Millennium Declaration, committing their countries to a new global partnership to reduce extreme poverty. The Millennium Declaration made possible the design and implementation of the eight Millennium Development Goals—a series of time-bound goals (with quantified targets and indicators) for reducing extreme poverty, with a deadline of 2015.

Considered together, the Earth Summit's sustainable development principles, the definition and measurement of human development, the Millennium Declaration, and the Millennium Development Goals—these constitute significant progress towards a holistical approach to development, and to measuring progress toward that end.

Significant progress towards sustainable development has certainly been made in the last two decades. Despite this, programmes and policies that focus on the 'triple-win' space are not yet standard practice, not yet the habit of policymaking.

What has worked?

Trends over the past 40 years document significant improvements in human development, especially amongst the poorest countries (Box 3). Countries in the lowest 25 percent of the human development index rankings improved their overall HDI by 82 percent over the period—twice the global average. Since 1990 (the baseline against which progress toward attaining the Millennium Development Goals is measured), hundreds of millions of people have been lifted out of poverty. The world is within reach of seeing every child enrolled in primary school. Fewer lives are being lost to hunger and disease. The world overall is healthier, wealthier, and better educated than ever before.

Box 3: Progress towards achieving the Millennium Development Goals (MDGs)

- The world as a whole is on track to reach MDG1 (the target for cutting extreme poverty in half). By 2015, the global poverty rate should fall below 15 percent—well under the 23 percent target.
- Some of the poorest countries have made the greatest strides in education (MDG2). For example, Burundi, Rwanda, Samoa, Sao Tome and Principe, Togo, and Tanzania have achieved or are nearing the goal of universal primary education.
- The number of deaths of children under the age of five declined from 12.4 million in 1990 to 8.1 million in 2009 (MDG4). This means nearly 12,000 fewer children die each day.
- Increased funding and more intensive control efforts have cut deaths from malaria by 20 percent worldwide (MDG6), from nearly 985,000 in 2000 to 781,000 in 2009.
- New HIV infections have declined steadily (MDG6). In 2009, some 2.6 million people were newly infected—a 21 percent drop since 1997, when new infections peaked.
- The numbers of people receiving antiretroviral therapy for HIV or AIDS increased 13-fold from 2004 to 2009 (MDG6), thanks to increased funding and expanded programmes.
- Some 1.1 billion people in urban areas and 723 million people in rural areas gained access to improved drinking water sources during 1990-2008 (MDG7).

Source: 'Major progress towards Millennium Development Goals,but the most vulnerable are left behind, UN report says', UN Department of Public Information, July 2011

Progress has likewise been made in repairing the ozone layer (Box 4), in reducing pollution in major river basins, in reducing technical losses in the use of energy, water, and other natural resources, in expanding the land and coastal regions covered by protected areas, and in extending basic services. The work of global institutions and treaties whose roots can be traced to Rio 20 years ago—the Global Environment Facility, the global conventions on climate change, biodiversity, and desertification—have made concrete improvements in environmental quality for people all over the world. These conventions have made possible the mobilization of billions of dollars for investments in the global environmental commons. The 'think globally, act locally' slogan, which was popularized at Rio, has taught us the importance of civil society and community empowerment. Growing numbers of banks and corporations issue annual sustainability reports, showing how ecological concerns have become part of 'business as usual'.

Box 4: Repairing the ozone layer

Depletion of the atmosphere's protective ozone layer was a key global environmental concern in the late 1980s, following the discovery of a major ozone 'hole' over the Antarctic. The Earth was thought to have been on track to lose two thirds of its ozone layer by 2065, leading to dramatic increases in skin cancer. But thanks to the Montreal Protocol to the Vienna Convention for the Protection of the Ozone Layer (which entered into force in 1989), global chlorofluorocarbon production was completely phased out by 1996. Since then, the ozone layer has begun to recover; Antarctic ozone is expected to return to pre-1980 levels sometime between 2060 and 2075.

Adapted from Resilient People, Resilient Planet (2012), report of Secretary General's High Level Global Sustainability Panel

What needs to be done?

As important as this progress has been, trends of the past 20 years show that, in many respects, development has not been sustainable—either environmentally or socially.

Growth in global output (from $11 to $63 trillion, according to IMF data) and population (from 4.6 to seven billion people) has placed new demands on the planet—particularly the global commons, the management of which can not be left to the invisible hand of the market. The atmosphere's ability to absorb greenhouse gases (without significant temperature increases), the oceans' abilities to generate bionutrients, the world's forest cover, the earth's soil nutrients—these are among the planetary boundaries that are increasingly overtaxed by the march of progress. One fifth of the world's coral reefs have been damaged beyond repair. Desertification in regions such as the Sahel threatens livelihoods in the drylands, which are home to a third of the world's people. Relative prices of food, energy, and many primary products have risen sharply since early 2007. Local communities—particularly in coastal areas and arid regions—are facing growing threats from floods, droughts and increasing competition for dwindling resources. There is a growing global consensus that current production and consumption patterns are not environmentally sustainable.

The social dimension of sustainable development is a mixed picture. Despite the progress made in achieving the MDGs, results have been uneven within and between countries, and there are still too many people being left behind. Progress tends to bypass those who are lowest on the economic ladder or are otherwise disadvantaged because of their sex, age, disability or ethnicity. Disparities between urban and rural areas remain daunting.

In 2009, nearly a quarter of the children in the developing world were underweight, with the poorest children most affected. Children from the poorest households in the developing world are more than twice as likely to die before their fifth birthday as children in the richest households. Recent UNICEF research finds that some four million young children die each year—more than 10,000 per day—due to hunger, malnutrition, and unsafe drinking water.

Some 1.3 billion people did not have access to reliable electricity services in 2009; 2.7 billion were without clean cooking facilities. Some 780 million people lacked access to safe drinking water in 2010, and 2.5 billion lacked access to modern sanitation systems. The socio-economic consequences of inadequate access to improved water and sanitation services are substantial. Annual GDP losses associated with inadequate access to water have been assessed at 6.4 percent, 5.2 percent, and 7.2 percent in India, Ghana, and Cambodia, respectively.

Harsh gender-based inequalities persist in many societies, despite evidence showing a positive correlation between closing gender gaps and more favourable development outcomes. Women lack access to land, property and inheritance rights in much of the world, violence is a brutal reality for millions of women and girls in many countries, women's access to basic reproductive health services is too often denied, and in many developing countries girls continue to lag behind boys in school enrollment and completion. Despite much progress since the World Conference on Women in Beijing in 1995, women continue to be poorly represented within the public service, in particular in leadership and decision-making positions.

Children who are poor, female, or living in a conflict zone are less likely to be in school. Worldwide, among children of primary school age not enrolled in school, 42 percent—28 million—live in poor countries affected by conflict. As we have witnessed again and again the last 20 years, conflict is an absolute showstopper for sustainable development. Successful conflict prevention and peacebuilding are prerequisites for development progress. A balanced and holistic sustainable development agenda is the most effective approach to preventing conflict and securing peace.

Poverty, demographic pressures, and access to basic services have traditionally been seen as predominantly rural problems. This may now be changing. A recent World Bank study finds that, as of 2010, the majority of the world's population was living in cities. According to the Making Cities Work initiative, the world's population by 2050 will grow by an additional 2.2 billion people—2.1 billion of whom will be born in cities, and 2.0 billion of whom will be born in the world's poorest cities.

The development challenges of the future will therefore increasingly wear an urban face. Rapid, unplanned urbanization is already producing new and exacerbating some old social problems. Violent crime in urban areas is one of these, particularly among youth living in informal peri-urban settlements facing uncertain employment prospects in the formal economy. Recent UNDP research describes and analyzes disturbing increases in violent crime in the Caribbean: during 1990-2010, for example, the homicide rate (per 100,000 population) in Jamaica rose from 21 to 51; in Trinidad and Tobago it rose from 5 to 35. Rural development prospects continue to be challenging: many communities suffer from underinvestment in agriculture, energy and transport infrastructure, increased competition for land, water and other resources, climate change impacts, and devastation from AIDS, malaria, and other diseases.

At least thirty million jobs were lost globally during 2007-2009, and labour markets have yet to fully recover from the impact of the global financial crisis. Global unemployment is now estimated at 200 million. Another 400 million jobs will be needed to keep up with new labour-market entrants. In addition, 900 million workers—around 30 percent of the global labour force—are 'working poor', living on less than two dollars a day. In many countries, job prospects for the young are at their least favourable in years.

Income poverty, gender gaps, unequal access to resources, basic services, and decent work, heightened exposure to disaster and environmental risks—these all go together. This confluence is not a coincidence: the human costs of environmental degradation and social underdevelopment are born predominantly by the poor, whose livelihoods and welfare are most closely linked to natural resources and social protection, and who are therefore most likely to bear the social costs of unsustainable environmental practices.

The 'Arab Spring' shows how these linkages are not academic. Real and perceived social inequities in this region have interacted with high food prices and governance concerns to create deep-seated socio-political instability, conflict, and crisis—even in upper-middle income countries. Moreover, the advent of social media and the new information and communications technologies that underpin them have given the aggrieved and vulnerable new instruments to register their concerns—and force policy makers to listen.

Things can be different

As we look towards 'Rio+20' and beyond, to the post-2015 development framework that will succeed the Millennium Development Goals, we face the question: 'What do we want our future to look like?'

A succinct response to this question was captured in a recent speech by Brazilian President Dilma Rousseff (Box 5): *"We want the word 'development' always associated with the term 'sustainable'…We believe that it is possible to grow and to include, to protect and to conserve."*

Box 5: Brazilian President Dilma Rousseff on sustainable development, and 'Rio+20'

We want the word 'development' always associated with the term 'sustainable'. Together with the Millennium Development Goals, we need to set the goals for sustainable development. These goals, including commitments and targets for all countries in the world, should have at its core the fight against poverty and inequality, as well as environmental sustainability.

In my government, when we talk about sustainable development we mean accelerated growth of our economy in order to distribute wealth, in order to create formal jobs and to increase the income of workers. We mean income distribution to eradicate extreme poverty and to reduce poverty, including public policies to improve education, health, public safety and all public services provided by the Brazilian government. We mean balanced regional growth so as to correct the inequality between the regions in Brazil. We mean creating a vast market of mass consumption goods, which will provide the internal support to our development. We mean that Brazil is becoming, and we will become, a country of middle classes. We mean development with environmental sustainability as a prerequisite. Sustainable development also means strengthening social participation and democracy, encouraging and defending our values, our culture, and our cultural diversity.

We believe that it is possible to grow and to include, to protect and to conserve.

Rio+20 will discuss a development model capable of linking growth and job creation, poverty eradication and inequality reduction, social participation and expansion of rights, education and technological innovation, sustainable use and preservation of environmental resources."

Taken from an unofficial translation of her speech delivered to the World Social Forum in Porto Alegre, 26 January 2012

Brazil's development experience shows that the future can indeed be different. In the last two decades, Brazil has benefitted from a combination of:

- Rapid economic growth;
- Significant declines in income poverty and inequality;

- The attainment of near universal access to basic energy, water, and sanitation services;
- Very high shares of renewables in electricity generation;
- Important social policy innovations; and
- Balancing rural development needs with progress in protecting the country's natural capital.

Just as the Earth Summit set a new direction for our world 20 years ago, so now policy-makers, experts, and civil society and advocacy groups must learn from such experiences to revisit the premise of current development models and see what works, why, and where we can and must do better.

It is time to recalibrate the global development agenda.

Recalibrating the agenda: what is needed?

The 1992 Rio sustainable development principles offer a vision for combining economic growth with environmental and social sustainability. Twenty years later, questions about the implementation of these principles have risen to the fore. Economic growth and development have continued and income poverty rates have fallen, but this progress has been delivered by consumption and production patterns that are increasingly seen to be unsustainable. Continued progress in reducing poverty and improving access to basic services requires a vision of sustainable development that simultaneously:

- Prices natural resources—including common property resources—at levels that create incentives for sustainable production, consumption, and conservation; and
- Moves away from unsustainable policy frameworks—such as fossil fuel subsidies—towards policies that:
  - encourage sustainable production and consumption patterns; while
  - protecting those most vulnerable to the effects of higher food and energy prices, and of transitions away from "brown" to "green" economies; and which
  - build resilience, in countries and communities, to climate and other socio-economic risks.

Progress towards this vision is particularly important in six areas:

1. Revisiting finance for development.
2. Developing new metrics for sustainable development.
3. Accelerating progress towards attaining the MDGs, while putting Sustainable Development Goals at the heart of the post-2015 global development framework.
4. Boosting the role of 'triple-win' policies and programming.
5. Investing more in good governance and capacity development.
6. Leveraging knowledge and innovation to deliver development results.

1. Finance for sustainable development

Financing for sustainable development needs to increase. At the same time, fiscal tensions in OECD-DAC countries are squeezing the fiscal space for traditional development cooperation. While overall global aid spending hit its highest level ever in 2010, a decline in OECD-DAC aid flows was noted in 2011; further near-term declines seem not unlikely. Longer term, estimates of the volume and shape of other forms of development assistance (e.g., climate finance) face considerable uncertainty.

The costs of shifting towards a sustainable future are real, however. A relatively low estimate of the total annual climate change mitigation and adaptation costs through 2030 is $249 billion, for example; and this addresses only one threat (global warming) to the global environmental commons. By contrast,

official development assistance (ODA) constitutes a relatively small pool of finance, at approximately $130 billion annually. Most of the investments in regenerating the global commons will therefore be owned, managed, and financed, by the private sector. Helping create the appropriate enabling environment, to direct these flows—ODA, domestically available public finance, other sources—to the projects where they can deliver the largest transformational impact, is a critically important task for the public sector. No less important, however, is the need to ensure that the public funds that are available to support national transitions to sustainable development are able to leverage and catalyze larger pools of private finance.

A number of possible new public financing mechanisms merit serious consideration. Tobin taxes—levies on financial transactions with which financial market instability or other negative externalities may be associated—are one such category. Thanks in part to recent changes in the payments systems for foreign exchange transactions, UNDP's 2011 '*Sustainability and Equity: A Better Future for All' Human Development Report* found that a 0.005 percent tax on foreign exchange transactions would yield some $40 billion annually.

There are other options:

- Governments spend nearly $1 trillion annually on environmentally unsustainable subsidies, including for fossil fuel production. Abolishing or curtailing such subsidies would promote both economic and environmental sustainability. The savings could finance investments in sustainable development—in social protection to shield those most vulnerable to higher energy prices, in expanding clean and renewable energy solutions, and in reducing the social costs of transitions from 'brown' to 'green' economies facing carbon- and resource-intensive sectors.

- Governments also spend nearly $5 trillion annually on public procurement (10-20 percent of GDP in most developing countries). If one fifth of these expenditures were to be managed in accordance with sustainable development criteria (e.g., prioritizing the use of recycled resources, or services supplied via social enterprises) another $1 trillion in financing for sustainable development would appear.

These points show that financing for sustainable development is available. They also show that—if generated correctly—the process of generating these resources can help to recalibrate the global development agenda and regenerate the global environmental commons.

2. New metrics for sustainable development: Beyond GDP and the bottom line

The metrics by which progress is assessed poorly serve the cause of sustainable development, in both the public and private sectors.

In the public sector, 'Rio+20' should be the beginning of the end of measuring development progress mainly in terms of growth in GDP that is not adjusted to reflect environmental externalities. The 'Rio+20' final document is an opportunity to request that the UN system and the Bretton Woods institutions accelerate work on initiatives like the wealth adjusted valuation of ecosystem services, and the System of Environmental-Economic Accounting—the introduction of which started in Europe, for air pollutants, environmental taxes, and material flow accounts, in 2012. The initiatives could generate gross national income for sustainable development, a sustainable development index, or both. These metrics, which could be taken up by the UN Statistical Commission for consideration in the discussions around the post-2015 global development agenda, should seek to measure:

The UN Capital Development Fund is helping the Government of Ethiopia to provide basic social and economic infrastructure and improve the natural resource base of local communities.
© UNCDF/Adam Rogers

- Progress in 'greening' key sectors, such as environmental investments, the sales of 'green' goods and services and green jobs; improvements in energy and resource efficiency; re-use, recycling, and other measures of 'doing more with less'; and
- Changes in welfare that reflect holistic, integrated trends in natural capital, poverty, and social inclusiveness, as well as output—indicators of how well the economy is delivering across all three strands of sustainable development. Work to develop a sustainability-adjusted human development index could likewise be accelerated.

In the **private sector**, important progress has been made in corporate social responsibility during the past two decades. The private sector is the driver of economic growth and highly responsive to incentives provided by all levels of government. In this respect, further steps are needed—particularly in terms of:

- moving toward standardized 'triple bottom line' corporate reporting frameworks that can monitor the links between commercial behavior and sustainable development, reflecting social and environmental, as well as financial criteria;
- requirements that all publicly traded companies regularly report on their social and environmental (as well as financial) sustainability; and that key financial data be reported on a country-by-country basis, in all jurisdictions in which companies operate, in order to improve the quality of information about global development finance and reduce illicit financial flows.

These innovations could support the monitoring of progress towards sustainable development, including through the global sustainable development outlook report proposed by the Secretary General's High Level Global Sustainability Panel.

3. From MDGs to SDGs

Attaining the Millennium Development Goals is the first step towards a sustainable future—even as the conversation on what the post-2015 development framework looks to begin in earnest.

During 2010-2011, UNDP together with other UN agencies introduced the MDG acceleration framework to do just that. This framework has now been deployed in some 30 countries, and demand for its use is growing. The framework brings governments, development partners, and other stakeholders together to analyze why—often despite a range of strategies and plans—progress towards achieving specific MDGs is proceeding too slowly. Bottlenecks and constraints are identified, action plans to address them are designed and implemented, and the necessary resources are mobilized. For example, in four countries in the Sahel—Niger, Burkina Faso, Chad, and Mali—this framework is focusing on food security and nutrition (MDG1). Priority actions have been identified to widen access to seeds and fertilizer, and decentralize the services that provide them; improve nutrition; expand social protection; and enhance the technical know-how of small-scale farmers.

Progress already achieved toward meeting the Millennium Development Goals can be set back, if not reversed, by the shocks of disasters, macroeconomic instability, food shortages, or socio-political unrest. Once progress is reversed, the impacts are multiple and can span generations. If instability—and the social and economic unrest it can generate—has become an enduring, systematic characteristic of the global economy, then countries must be better prepared for the waves to come. They need to safeguard and sustain progress already made.

For many poor households, the impact of crises depends on what governments do with their budgets: how much do they spend to fight the crisis, protect the poorest, and finance progress towards meeting the MDGs? This underscores the need for participation and local solutions as well as direct interventions—such as developing and extending social protection systems, clarifying and strengthening property rights, and the legal empowerment of the poor more broadly. Such interventions help societies build resilience to shocks and sustain MDG progress.

The Millennium Development Goals—even if they are met—will not automatically shift the world onto a sustainable development trajectory, partially because the MDGs are weaker on environmental concerns. In a number of respects, progress in meeting MDG 7 ('ensure environmental sustainability') has been relatively modest, in part because of governance shortcomings, in part because of difficulties with measuring and monitoring progress towards environmental sustainability. More holistic Sustainable Development Goals should therefore evolve from the MDGs, and serve as the basis for a new, post-2015 development framework.

The Sustainable Development Goals should be one set of global development goals that:

- Reflect the entirety of the sustainable development agenda, including the continuing importance of poverty reduction;
- Are universal in character, pertaining to developed and middle-income countries, as well as to low-income and less developed countries; and
- Address all three strands of sustainable development in each of the goals.

To the extent possible, the Sustainable Development Goals should seek to build on the MDGs and use quantified indicators to monitor progress. The post-2015 development framework should also be firmly grounded in the other core values besides poverty reduction expressed in the UN Charter and reaffirmed in

Just five years ago, Cerro Santa Ana was a slum. Today, thanks to community participation in renovation, it is a tourist destination that attracts more than 20,000 visitors each week.
© Elder Bravo / UNDP Ecuador

the Millennium Declaration—human rights, justice, peace and security. Such an approach can help ensure that national transitions to sustainable development are aligned with broader understandings of people's welfare, enlarging their opportunities.

4. 'Triple-win' policies and programming

'Triple-win' policies and programming, integrating and finding synergies between social development, economic growth, and environmental sustainability, are the future of development. Many countries are already implementing programming that integrates the social, environmental, and economic strands of sustainable development. For example:

- The government of **India** has adopted several rights-based laws to address inequity, protect the vulnerable, and ensure sustainable development. These include laws to protect the right to education and information, national food security legislation, and the Mahatma Gandhi National Rural Employment Guarantee Act. In addition to containing the world's largest wage guarantee programme—providing employment to approximately 54 million households—this integrated framework reduces food insecurity by conserving water, soil fertility, and biodiversity; it also sequesters carbon. Almost 50 percent of the programme's workers are women; 43 percent are from historically disadvantaged groups.

- Under **Brazil's** *Bolsa Família* programme, 13 million households—nearly 30 percent of the population—receive benefits, at a cost of less than one percent of annual GDP. Recipient households are required to have their children in school and to ensure they receive regular medical attention. The imperatives of rural development and protecting the country's natural capital are aligned via the *Bolsa Verde* programme, which, by 2014, will offer conditional cash transfers to 73,000 smallholder and indigenous households living in environmentally sensitive areas, who pursue ecologically sustainable livelihoods.

- **South Africa's** 'Working for Water' programme employs 20,000 people per annum, to remove water-intensive alien tree and plant species from local habitats. Since its inception in 1995, the programme has cleared more than one million hectares of alien plant species, releasing fifty million cubic meters of additional water per annum. Much of this water is used for irrigated agriculture, reducing local food insecurity. The programme targets marginalized groups as potential employees: it seeks to ensure that 60 percent of its staff are women, 20 percent are youth, and five percent are living with disabilities.

- **Ethiopia's** Productive Safety Net programme has reached over eight million beneficiaries in 300 food-insecure districts, providing cash and predictable food supplies in return for participation in public works in such areas as environmental conservation, water management, and terracing. It has increased caloric intake by 19 percent among recipient households, and nearly half of beneficiaries reported a greater use of health facilities.

- In **Niger's** southern regions, reforestation based on farmer-managed natural regeneration, and supported by local communities, has reforested five million hectares (about four percent of the country's land area), with the affected areas benefitting from rapidly growing parkland in forest and vegetation cover density. These efforts increased cereal yields by 100 kilograms per hectare in 2009, improving livelihoods and food security for some 2.5 million people. The primary beneficiaries have been residents of rural communities, with particular attention to vulnerable communities and indigenous people.

Energy offers clear opportunities for better integrating the three strands of sustainable development. By expanding access to sustainable energy supplies, progress can be advanced along all three dimensions:

- Economic: billions of under-served consumers can be brought into the global market place, and business- and employment creation could accelerate—particularly in rural areas, where such energy supplies are most likely to be lacking.

- Social: women and children can be liberated from the drudgery of gathering biomass for fuel; health and education could be improved by reducing indoor pollution from poorly designed stoves, and by providing health clinics and schools with the heat and power needed for uninterrupted service delivery.

- Environmental: deforestation, and the emissions created by burning soft coal and biomass that contribute to climate change, could be reduced.

The UN Secretary General's Sustainable Energy for All initiative is designed to generate global momentum to achieve three specific energy targets by 2030, namely:

- Achieving universal access to modern energy services;

- Doubling the rate of improvement in energy efficiency; and

- Doubling the share of renewables in the global energy mix.

The sustainable development potential of this initiative is illustrated by Nepal's Rural Energy Development Programme. Since its introduction in 1996, this programme has brought decentralized renewable energy services to some one million people living in the most remote parts of the country. It has provided reliable, low-cost electricity to rural communities via the construction of micro hydropower stations, and has raised living standards. Average incomes in beneficiary households have increased due to improvements in electricity access, while average annual household spending on energy fell to $19 dollars compared to $41 spent by non-electrified households.

As of 2010, the programme had connected 59,000 households to micro hydropower installations, constructed 317 new micro hydropower plants (with 5.7 megawatts of installed capacity), and installed nearly 15,000 improved cooking stoves, 7,000 toilet-attached biogas installations, and 3,200 solar home heating systems.

5. Investing in good governance and capacity development

Country experiences indicate that public finance is usually not the binding constraint on national programmes that make a difference for sustainable development. *Bolsa Família* lifts millions of people out of poverty in Brazil every year at the cost of less than one percent of GDP. Croatia's public sector energy efficiency programme leveraged $4 million in initial seed funding into $30 million in private sector investments.

Instead, it is usually the quality of governance and the capacity to mobilize and manage development finance that matter. Capacity development is needed to help developing countries absorb traditional and innovative forms of development finance and innovative technologies, and to avoid high-carbon development paths, while also reducing poverty and inequality. Effective lawmaking, oversight, and representation—the three chief functions of parliaments—along with access to justice, are fundamental to ensuring that all branches of government are accountable and transparent before the public. Parliaments can be powerful agents of change for sustainable development. But they often need strengthened capacity, whether to legislate for sustainable development or to promote institutional reform.

Decentralization, local and inclusive governance, and social mobilization are needed for empowered citizens to 'think globally while acting locally'. The transformations now taking place in the Arab world illustrate this point. There, people have come out onto the street to express their desire for dignity, opportunity, and justice alongside a meaningful say in the decisions that affect their lives, and an end to corruption, abuse and repression. They remind us that, to be sustainable, development must provide for human rights, justice, the rule of law, accountability, equity and—crucially—gender equality and women's empowerment.

Democratic governance cannot be fully achieved without the participation of women at all levels. This is not only a good in itself; there is also growing evidence that greater participation of women in institutions increases responsiveness to women's priorities and needs and in determining the manner in which services are provided.

In the words of the Secretary General's High Level Global Sustainability Panel: "democratic governance and full respect for human rights are key pre-requisites for empowering people to make sustainable choices." Seen in this light, governance serves as the glue that binds together efforts to more closely integrate the three strands of social, economic, and environmental development in policy and in practice.

This is particularly true when it comes to:

- *Clear land and natural resource rights for local communities, to generate incomes and jobs, strengthen local incentives to sustainably manage the resources* on which local livelihoods depend, and help ensure equity of such rights between women and men. UNDP's Legal Empowerment of the Poor initiative offers many good examples of what can be done in this respect.

Men and women inspect a solar panel. © Jorgen Schytte / UNDP Egypt

- *Institutional capacity* to design and implement integrated development policies and programmes that address all three sustainable development strands; and which benefit from partnerships between central and local governments, private companies, civil society organizations, and international organizations. Creating this institutional capacity often requires a combination of public administration reforms—structural reviews, civil service reform, use of e-governance tools, finding the right balance of decentralization, deconcentration, and centralization—and 'collaborative' capacity development initiatives, emphasizing the expansion of capacities for brokerage, partnerships, and network development and management.
- *Social programming* that integrates social protection with social service provision, environmental protection, and crisis prevention and recovery; that improves access to energy, water, sanitation and other basic services; and which protects the poor and vulnerable by taking rights-based approaches that reflect the global conventions and the UN's universal values.

For example, growing numbers of large metropolitan areas are moving towards smart growth in cities, which also offers an abundance of opportunities for grass-roots innovation and creating pro-poor green economies—as envisioned by Agenda 21 at Rio in 1992. Important public investment—and income- and employment-generation—opportunities are present *inter alia* in the construction, refurbishing, and management of public infrastructure and programming, whether for energy-efficient buildings and mass transit systems, or for urban agriculture to help address urban poverty and hunger.

For many smaller cities, taking advantage of these opportunities requires significant investments in capacity development. This is particularly true for improving governance and financial management systems (*inter alia* through public-private partnerships), and engaging with, and responding to the needs of, poor and vulnerable households and communities, including women, migrants, and the residents of informal settlements.

Box 6: Mechanisms for policy coherence

Options for improving policy coherence—allowing governments to break silos and better integrate the three strands of sustainable development—include the following:

- **Institutions:** High-level coordination bodies, either within the state—such as India's Planning Commission, China's National Development and Reform Commission, and South Africa's National Planning Commission—or of a multisectoral nature, such as Barbados's Social Partnership initiative (which brings together ministers, employers, and trade unions to address major economic, social and environmental challenges under the leadership of the Prime Minister).
- **Instruments:** National sustainable development plans and strategies, which:
  - integrate the three strands of sustainable development;
  - are championed by the head of state or government;
  - receive broad political support in parliament;
  - bring together all relevant stakeholders (sub-national governments, private sector, civil society);
  - have time frames that are long enough to address development challenges, but short enough to influence behavior today;
  - are aligned with national budgets, sectoral development programmes, and donor activities; and
  - contain monitorable indicators for assessing progress toward meeting strategic objectives.

Adapted from the 2012 Resilient People, Resilient Planet report of the Secretary General's High Level Global Sustainability Panel, p. 68

Sustainable development happens at the country—and often at the community—level. Efforts to develop 'triple-win' policies and programming that integrate the three strands of sustainable development, while at the same time strengthening coordination across and between all actors for increased effectiveness, therefore need to focus on:

- *Strengthening inter-ministerial coordination*, including via the lead of high level government offices with appropriate institutional capacity and authority in development policy. As the UN Secretary General's High Level Global Sustainability Panel recommends, governments should adopt whole-of-government approaches under the leadership of the head of state or government, and involving all relevant ministries, in order to address issues across sectors and improve policy coherence. Governments and parliaments should incorporate the sustainable development perspective into their strategies, their legislation and, in particular, their budget processes.

- *Getting the incentives right through aligned and integrated national, sub-national, local and sectoral development strategies* that are tied to medium-term expenditure frameworks. Synergies between development strategies allow all levels of government to get the incentives right for attracting public and private sector investment. The same institutions should have the capacity needed to effectively design and implement these strategies, at the level of the individual, institution, and broader environment.

- *Ensure meaningful participation* of the private sector, representatives of parliaments and sub-national governments, and civil society actors—particularly those representing vulnerable groups, including women, children, indigenous peoples, ethnic minorities, people living with disabilities or HIV and AIDS, or low-skilled workers.

An Indian woman works with handmade paper destined for foreign markets. © UNDP India

- *Be informed by the latest global and local scientific data and knowledge*, with carefully designed accountability and regulatory frameworks and enforcement mechanisms.
- *Raise public awareness* about the links between governance, poverty reduction, gender equality, and environmental sustainability—possibly through the global application of the environmental governance principles of the Aarhus Convention.
- *Promote resilience to crisis and shocks*, regardless of whether they are associated with disasters, macroeconomic instability, high food or energy prices, or armed conflict. More accurate targeting of social assistance, the expansion of crop insurance, and better use of early warning systems can boost resilience among vulnerable households, helping them to invest in their future and take moderate risks, and ultimately drive productivity gains and inclusive growth.

Global governance. Addressing governance at the *global level* is also important. This could mean improving the functioning of the United Nations Economic and Social Council, possibly by turning the Commission on Sustainable Development into a Sustainable Development Council. It could also mean the possible introduction of a voluntary sustainable development peer review mechanism or a periodic global sustainable development outlook report, to monitor progress and encourage development coherence.

So far, however, the discussion of how governments can more strongly bring together the three strands of sustainable development and drive implementation at the national and sub-national level, is less concrete. This is an area in which the United Nations has a wealth of accumulated experience, and can play a critical role in supporting countries in accelerating progress towards sustainable development. 'Rio+20' provides an opportunity to strengthen UN Country Teams and the Resident Coordinator system, to bring support and services from across the UN system to programme countries in a way that can facilitate integrated action across the three strands of sustainable development.

6. Leveraging knowledge and innovation for development results

The case studies below point to many successful examples of sustainable development. Important lessons have been learned from both the successes and the mistakes made in the process. But the hard-won benefits produced are typically isolated, even though their broader application could produce exponential benefits and contribute vital ideas to the evolution of sustainable development.

As the section on governance and capacity above points out, one of the principles that should underpin all 'triple-win' decisions is that they should be informed by the latest global and local scientific data and knowledge. National transitions to sustainable development should be based on relevant innovation, knowledge, capacity, and experience from around the world, leveraging south-south and other forms of cooperation for increasingly effective development results.

As 'Rio+20' approaches, a globally recognized home for this function—a Global Centre for Sustainable Development—should be found. Such a Centre could catalyze innovation, act as a repository of initiatives, a global knowledge-sharing platform, and an analytical hub, as well as broker links between the demand for, and supply of, sustainable development initiatives. It could promote collaborative and interdisciplinary research and create linkages across researchers, policymakers, and the private sector; and identify, disseminate, and scale-up successful models.

There is a clear need for organizations with the mandate and capability to gather information on these initiatives, analyze their effectiveness and political feasibility, and broker their adoption throughout the world. While global centers exist for green growth, inclusive growth, and social innovation, they do not systematically pull the green, the social, and the economic together into coherent frameworks, analysis, and actionable policies.

What do UNDP and the UN bring to the table?

On the ground in more than 177 countries and territories, UNDP since 1966 has been partnering with people in all walks of society to help empower lives and build resilient nations. As the UN agency with a mandate to promote and integrate all three strands of sustainable development, as well as principles of democratic governance, UNDP encourages transformational change. It does so with particular experience and expertise in how to build and strengthen institutional capacity.

UNDP's track record in supporting sustainable development is reflected in its mandated expertise in each strand of development—and in its ability to see across and integrate all three strands. The UNDP-UNEP Poverty-Environment Initiative is an example of how this can take place (Box 7). At the national level, this work takes place within the framework of the UN Resident Coordinator system and its convening power—ideally in a 'one UN framework'.

In particular, UNDP promotes sustainable development through supporting:

- **inclusive and sustainable growth**, advancing economic opportunities via equitable access to social services, protecting the environment and embracing low-emission, climate resilient development; and
- **democratic governance for inclusion, resilience and peace**, advancing equality, the rule of law, human rights, and accountable, effective institutions in times of stability and of crisis, with the participation of all peoples—including women, girls, youth and marginalized groups—in political transitions and processes.

Box 7: The UNDP-UNEP Poverty and Environment Initiative

The Poverty-Environment Initiative is a UN-led global programme that supports country efforts to reduce poverty by strengthening environmental sustainability—and vice versa. It focuses in particular on ensuring that poverty-environment linkages are appropriately reflected in national and local development planning, from policy-making to budgeting, implementation and monitoring. The Poverty-Environment Initiative:

- was launched in 2005 and significantly scaled-up in 2007;
- is funded by the Governments of Belgium, Denmark, Ireland, Norway, Spain, Sweden, the United Kingdom, and the United States of America, and by the European Union;
- works in Africa, Asia-Pacific, Eastern Europe and Central Asia, and Latin America and the Caribbean;
- has full programmes in seventeen countries, and is providing advisory services in a number of others; and
- provides supra-national support for 'Delivering as One' and other measures to increase the UN's development effectiveness at the national level, in the areas of poverty reduction and environmental sustainability.

UNDP is committed to a global partnership for achieving UN Secretary General's Sustainable Energy for All initiative by 2030. Wherever there is a demand from governments, UNDP will capitalize on the convening power of the Resident Coordinator system to help strengthen governance arrangements and 'triple-win' policy and programming at the national and sub-national level, bringing policy options, financing, technology, and capacity development together to create conditions to scale up what works.

UNDP continues to advocate strongly for the achievement of the Millennium Development Goals, including via:

- the MDG acceleration framework;
- coordinating the UN's efforts to respond to national priorities, *inter alia* by working with the MDG Achievement Fund (Box 8);
- providing policy and technical advice to countries as they work to achieve the MDGs; and
- working with countries on in-depth analyses and reports on MDG progress.

Working within the wider UN family, UNDP is leveraging this experience to help countries to determine what the global development framework should look like after the 2015 MDG deadline.

As it strives to always be better, UNDP will:

- accelerate progress in greening its own programming and facilities, particularly in programme countries;
- use human development indicators and data to better monitor national transitions towards sustainable development;
- mainstream low-emission, climate-resilient development principles across its work; and
- leverage traditional and non-traditional partnerships and forms of development finance, to support national transitions toward sustainable development, particularly via south-south cooperation and public-private partnerships.

People lining up to cast their votes at a polling station in Mozambique. © P. Sudhakaran / UN Mozambique

Box 8: The UN MDG Achievement Fund—Reducing vulnerabilities and helping adapt to climate change

The MDG Achievement Fund (MDG-F) is a joint United Nations initiative that supports national efforts to reduce poverty and inequality and achieve the Millennium Development Goals. Established in December 2006 with an initial contribution of $710 million from the Government of Spain to UNDP on behalf of the United Nations system, MDG-F currently finances 130 joint programmes in eight thematic areas in 50 countries. The MDG-F's 'environment and climate change' thematic window has allocated nearly $90 million to 17 joint UN programmes that support efforts by governments, citizens and civil society organizations to reduce poverty by investing in environmental sustainability.

While the outcomes of these programmes are diverse, common elements include:

- Raising the profile of and emphasis on environment and natural resources issues in policy-making;
- Assessing and improving national and sub-national capacity to adapt to climate change;
- Exploring innovative approaches to climate change mitigation;
- Improving local governments' capacities to plan and implement environmental policies;
- Supporting the participation of civil society organizations in the planning and implementation of environmental policies and projects; and
- Efforts to link downstream project results with upstream policy dialogue.

In China, Colombia, and the Philippines projects funded by MDG-F work with indigenous and rural communities to address threats to livelihoods brought on by a changing climate, by supporting the application of climate-resilient agricultural techniques and crop diversification. This programming at the local level is accompanied by advocacy for the adoption of climate change policies and practices and the national level.

Case studies of sustainable development in practice

Progress towards sustainable development does not happen in the abstract; it occurs within the context of individual countries, sectors, and communities. Useful explanations of how sustainable development is done must be based on descriptions of concrete policies and programmes that integrate the economic, social, and environmental strands and then scale up these activities for broader impact.

Eight such case studies are briefly presented in the pages below. The countries profiled come from various regions (Latin America, Europe, Asia, Africa) and from contrasting developing countries and emerging economies—Bhutan, Brazil, Croatia, Mongolia, Namibia, Nepal, Niger, and South Africa. Many of the programmes and policies profiled have strong sectoral characteristics (e.g., 'energy', 'water', 'inclusive finance', or 'food security'). However, all these case studies satisfy two criteria:

- Irrespective of their sectoral origins, the programmes described have integrated the economic, social, and environmental strands of sustainable development in a meaningful way—they have generated 'triple wins'; and
- The programmes have been scaled up, creating national impact.

In addition, the case studies on Brazil and Bhutan provide a more macro view of sustainable development. The Brazilian study in particular describes how Brazil during the past two decades has managed to achieve significant development successes in terms of economic growth, reductions in poverty and inequality, and extending basic services, while also dramatically expanding the share of the Amazon rainforest covered by protected areas.

Taken together, these stories provide a brief but compelling narrative to show that sustainable development can, in fact, be made to happen; and how it can be made to happen.

Brazil: making sustainable development happen

Country context. The world's fifth largest country by territory and seventh largest by GDP, Brazil has abundant natural, human, and economic resources. Like many developing countries, Brazil during the past two decades has enjoyed rapid economic growth: per-capita GDP increased by nearly 50 percent during 1992-2011. Nonetheless, Brazil has historically faced a number of grave social challenges, including high levels of income inequality and social exclusion, large regional disparities, and lack of universal access to basic social services. The Amazon rain forest and other components of Brazil's biodiversity have come under growing threats.

Fortunately, Brazil during the past two decades has made great progress in combining economic growth with significant social gains, while moving to strengthen the protection of its natural capital. In addition to rapid GDP growth, Brazil during the past two decades has benefitted from:

- Large declines in income poverty;
- Reductions in income inequality;
- Achieving near universal access to basic energy services;
- Very high (by international standards) shares of renewables in electricity generation;
- Important social policy innovations; and
- The rapid expansion of forests in the Amazon basin that are included in protected areas.

These developments did not happen by accident: they result from measures taken by the Brazilian government—and supported by civil society and the private sector—to achieve sustainable and inclusive growth, to address the economic, social and environmental strands of sustainable development in an integrated manner. Brazil's experience shows that rapid progress in national transitions to sustainable development is possible.

Reductions in income poverty and inequality. Internationally comparable World Bank data show rates of income poverty and extreme income poverty (measured against daily per-capita thresholds of $2 and $1.25, respectively) dropping sharply during the 1993-2009 period (Chart 1). Thanks to this progress, the numbers of people living in poverty dropped by more than half (from 45 to 21 million for income poverty; from 26 to 12 million for extreme income poverty) during this time. While economic growth certainly contributed to this result, a very important role was played by reductions in inequality: the Gini coefficient for income inequality, which was close to .61 in 1993, had dropped to under .55 by 2009 (Chart 2). In contrast to many developing and developed countries, Brazil has managed to make its economic growth increasingly inclusive.

Chart 1: Income poverty, annual GDP growth rates, Brazil (1993-2009)

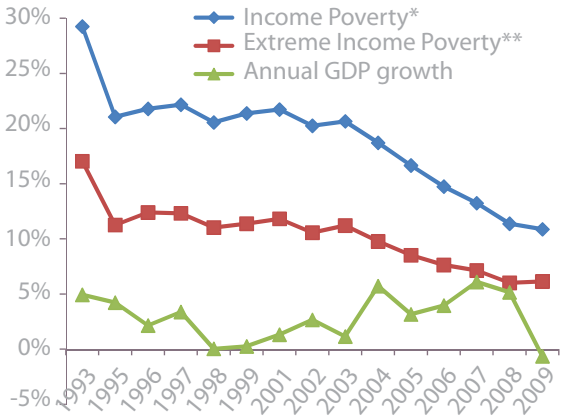
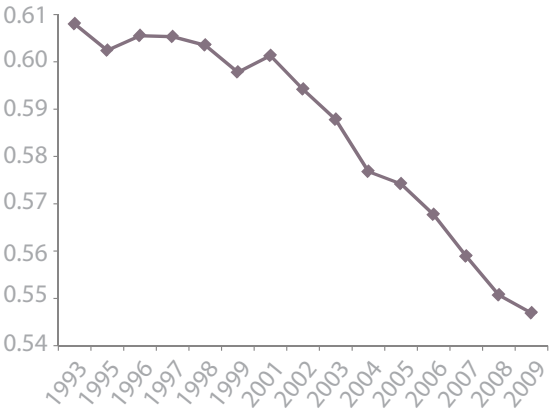


Chart 2: Gini coefficient of income inequality, Brazil (1993-2009)



* Income-based measure, at US$2/day.
** Income-based measure, at US$1.25/day.
Source: World Bank POVCALNET database, based on 2005 purchasing-power-parity exchange rates.

Because income inequality in Brazil fell during 2008-2009, severe income poverty continued to decline even during the global financial crisis (Brazil's GDP shrank in 2009). Brazil was thus able to shield many of the most vulnerable households from the effects of the crisis. On the other hand, Brazil's levels of income inequality remain among the world's highest, and reflect continuing challenges of poverty, social exclusion, and regional disparities. 2010 census data indicate that the extremely poor are concentrated in rural areas and in the Northeast region, are disproportionately young, and mostly of African descent. Many are illiterate.

These reductions in income poverty and inequality have been matched by important progress in alleviating non-income poverty:

- The under-five mortality rate declined from 59 in 1990 to 19 in 2010 (per 1000 live births);
- The infant mortality rate dropped from 50 in 1990 to 17 in 2010 (per 1000 live births);
- The maternal mortality rate fell from 120 in 1990 to 58 in 2008 (per 100,000 live births);
- The share of the population suffering from malnutrition dropped from 11 percent in 1991 to 6 percent in 2007;
- The share of the population with access to safe drinking water increased from 89 percent in 1990 to 98 percent in 2010; and
- The share of the population with access to improved sanitation facilities rose from 68 percent in 1990 to 79 percent in 2010.

Jair dos Santos says harvesting the cerrado fruit is more money and less work. With the extra income from the wild fruit, Mr. Santos is able to buy new furniture, tools and running water for his home.
© David Dudenhoefer / UNDP Brazil

These trends reflect the fact that Brazil has invested heavily in social as well as economic development. Believing that poverty is a multi-dimensional problem that goes well beyond the lack of income, the government has designed and implemented a number of integrated programmes for social protection, extension of basic services, and food security that have helped break vicious circles of social exclusion, lack of opportunity, low incomes, and poor health.

Launched in October 2003, the *Bolsa Família* ('Family Benefit') programme has become the Government's flagship social protection initiative. Under *Bolsa Família*, four different cash transfer programmes, which had previously been operated by separate ministries, were merged. By conditioning cash transfers on beneficiary compliance with requirements for school attendance, vaccinations, and pre-natal visits, *Bolsa Família* increases poor household use of basic services while also strengthening their human capital—both of which are essential to escaping from poverty. Complementary initiatives that are administered for beneficiary households include programmes for literacy, vocational training, microcredits (for small farmers), and the *Bolsa Verde* green benefits programme (see below).

A large body of evidence indicates that a significant share of the reductions in poverty and inequality mentioned above can be attributed, in part, to *Bolsa Família*. For example:

- *Bolsa Família* has been taken to scale: more than 13 million households (covering nearly 30 percent of the population) receive benefits under this programme. Depending on per-capita income and the number and age of children in the household, monthly benefits received under this programme can range from $17 to $164 per family (using January 2012 exchange rates). This can provide an important boost to household incomes, as the extreme poverty line is currently set at $36 per household member per month (which is roughly comparable to the international extreme poverty threshold of PPP$1.25 per day).

- UNDP research found that about one fifth of the 4.7 percentage point decline in the Gini coefficient during 1995-2004 could be attributed to *Bolsa Família*. Likewise, research by the Fundação Getúlio Vargas found that *Bolsa Família* alone was responsible for one sixth of the reduction in poverty and inequality (as measured by changes in the Gini coefficient) during 2003-2009.

Bolsa Família's successes reflect in part Brazil's long experience with conditional cash transfer programmes, the use of which began decades ago. It also reflects the importance of partnerships with civil society organizations, which help the government to reach out to vulnerable households and communities. This has allowed the government to undertake a number of steps to improve *Bolsa Família's* targeting accuracy over time. These include:

- Developing the appropriate division of responsibilities for managing the programme across the national government, states, districts, and municipalities in Brazil's decentralized context;
- Improving the quality of the information in the national beneficiary registry (in which 19 million families are currently included); and
- Improving cross-ministerial monitoring of beneficiary compliance with programme conditionalities, and of integration with other complementary programmes.

Bolsa Família's 'infrastructure' also facilitates the implementation of other targeted programmes. For instance, the debit card through which payments are made to beneficiaries is also being used for making payments to beneficiaries under complementary programmes. As a result of this targeting accuracy and managerial economies, *Bolsa Família*'s fiscal implications have been kept at relatively moderate levels. UNDP research finds that, in 2009, the programme absorbed only about 0.9 percent of total public spending, about 0.35 percent of GDP.

As part of the *Brasil Sem Miseria* (*Brazil Without Poverty*) social programme launched by President Dilma Rousseff in 2011, the government is now extending (by 2013) *Bolsa Família* to over 800,000 families that have the right to the benefits, but have not yet taken them up. To increase the efficiency in fighting extreme poverty and protecting children, the number of eligible beneficiary children per household will be increased from three to five. This expansion will allow for the extension of coverage to 1.3 million additional children and adolescents whose families comply with programme conditionalities for keeping them in school and in good health. Currently, an estimated 40 percent of the population living in extreme poverty is under 14 years of age.

***Fome Zero*.** When former Brazilian President Luiz Inácio Lula da Silva's ('Lula') started his first term in January 2003, he designated the eradication of hunger as one of his top priorities—famously stating in his inauguration speech that, if at the end of his term, every Brazilian will have three meals a day, he would have accomplished his life's mission. The *Fome Zero* (Zero Hunger) food security initiative, which was launched in 2003, was intended to do just this. Together with *Bolsa Família* and support for family agriculture through the state food procurement programme (*Programa de Aquisição de Alimentos*), *Fome Zero* is widely credited with raising the income of the poorest families in Brazil, improving child health, and reducing the scale of malnutrition. This helped make possible the inclusion of the right to food in the Brazilian constitution in February 2010.

Recognizing that eradicating hunger requires a comprehensive, multi-sectoral response, *Fome Zero* focuses both on the demand side of food security issues—via cash transfers (e.g., under *Bolsa Família*), targeted food deliveries (for vulnerable households and groups such as indigenous peoples and school children), and access to information—and on the supply side, *inter alia* via support of food production from small-scale and family farmers.

Luz Para Todos. Launched in November 2003, the *Luz Para Todos* (*Light for All*) rural electrification programme is allowing the Brazilian government to realize the promise of universal access to electricity. The programme envisions achieving universal access to electricity in rural areas by December 2015. As of December 2011, *Luz Para Todos* had provided access to electricity to 2.9 million families (around 14.5 million people) who had not had light in their homes prior to the programme's initiation. About 49 percent of those who acquired access to electricity for the first time were located in Brazil's poorest region, the Northeast. Many of these households benefit from access to off-grid electricity supplies, in the form of small diesel generators.

Coordinated by the Ministry of Mines and Energy and operated by the Eletrobrás power utility, *Luz Para Todos* reflects the constitutional obligation for service providers to offer universal access to electricity services in rural areas. Substantial federal and state subsidies are paid to service providers, to make up the difference between the low tariffs paid by low-income and rural households and cost-recovery levels. By making possible the supply of power where none was available before, these subsidies have given rural households new income-generating opportunities, *inter alia* via the expanded use of electric equipment. According to Eletrobrás, some 300,000 jobs have been generated, directly and indirectly, by *Luz Para Todos*. By providing access to electricity, the programme improves rural living standards and helps to limit out-migration to urban areas. Also, reliable electricity supplies facilitate the provision of better quality health, education, water supply, sanitation, and other social services, particularly in rural areas. A government survey (published in December 2011) found that 88 percent of recently connected families indicate that their housing conditions have improved; 36 percent reported that their family incomes have increased; and 41 percent reported increasing the time spent on learning and studies (at nighttime).

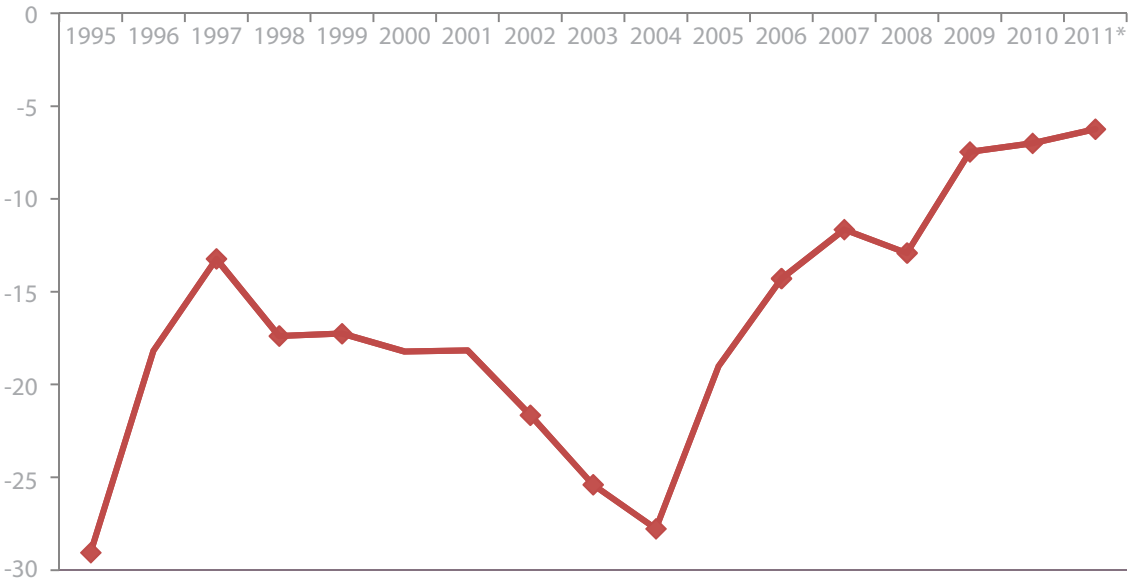
Água Para Todos. Brazil has made important progress during the past two decades in reducing the numbers of households without access to improved water or sanitation facilities. Nonetheless, as of 2010, 21 percent of the population did not have access to the latter; 2 percent did not have access to the former. Launched in July 2011 as part of the *Brasil Sem Miséria* poverty eradication initiative, the *Água Para Todos* (*Water for All*) programme seeks to close these gaps, in terms of water for household use and for irrigated food production. Families living in extreme poverty, and which are registered in the national beneficiary registry, are eligible for support under this programme. As of November 2011, the construction of 140,000 cisterns had been contracted. This is to expand to the deployment of 750,000 cisterns (and 6,000 simplified water supply systems) for household water consumption by 2014. In order to expand opportunities for smallholder farmers, 3,000 dams for the accumulation of rainwater, 150,000 production cisterns, and 20,000 small irrigation systems are to be constructed.

The ***Bolsa Verde*** Environmental Conservation Support programme was launched in October 2011, within the framework of the *Brasil Sem Miséria* poverty eradication initiative. *Bolsa Verde* encourages families living in extreme poverty in or near Brazil's protected areas to pursue environmentally sustainable livelihoods. In exchange for quarterly payments of some $160 over a two-year period (which can be extended) and training in forestry management, programme beneficiaries commit to abstain from illegal logging and poaching.

Bolsa Verde builds on and expands the *Bolsa Floresta (Forest Benefit)* programme, which is reported to have reached 35,000 families in the Amazonas state since 2007. By 2014, *Bolsa Verde* is to provide benefits to nearly 73,000 smallholder families and other traditional communities living in national forests, protected areas, and other settlements that contain important forest resources. Transfers of compensation payments under *Bolsa Verde*, which is managed by the Ministry of Environment, are made on the basis of *Bolsa Família* registration cards. Programme compliance is further monitored by satellite coverage, as well as via site visits.

Protected areas and deforestation The importance of *Bolsa Verde* is linked to the ambitious growth in Brazil's protected areas. Some 709,000 square kilometers of Amazon forest were included in the Amazon

Chart 3: Net changes in forest cover in Brazil's *Amazônia Legal* region (annual data, 1995-2011)



In thousands of square kilometers per year.
Source: Brazil's National Institute for Space Research.
* Estimate.

Protected Areas Programme as newly established protected areas during 2002-2009, bringing the total coverage up to some 2.2 million square kilometers—44 percent of the Amazon region (or 26 percent of Brazil's territory). One fifth of Brazil's forest area is now included in protected areas. The government's action plan to manage deforestation in the Amazon, which was launched in 2003, seems to have helped to slow the net loss of forest cover (see Chart 3 above). Recent Brazilian research indicates that 37 percent of the decline in deforestation recorded during 2004-2006 in the Amazon can be attributed to newly established protected areas. Moreover, in December 2008, former President Lula called for a 73 percent reduction in the deforestation of the Amazon rainforest by 2018.

The considerable slowdown in the pace of deforestation over the past seven years (see Chart 3) is an impressive achievement, especially since it has been accompanied by strong economic growth. However, it is reported that economic pressures continue to reduce forest cover, both within and outside of protected areas. Large illegal road networks have penetrated many of these areas, facilitating illicit logging. So while the pace of deforestation seems to have slowed in recent years, Brazil is not (yet) among the developing countries that have recently recorded net gains in forest cover.

It remains to be seen whether, as a new programme for preserving the environment by supporting livelihoods, *Bolsa Verde's* relatively modest financial resources can stand up to these commercial pressures. However, while the benefits paid out under *Bolsa Verde* may be too small to challenge the financial pull of the timber sector, they could be large enough to attract migrants to the protected areas—many of which seek to shield traditional and indigenous cultures from disruptive outside influences. Strengthening incentives for *Bolsa Verde* recipients to engage in reforestation activities could help reverse the continuing reduction in Brazil's forest cover.

Sustainable energy and climate change. Brazil benefits extensively from renewable energy technologies—principally hydro power for electricity generation and ethanol-based biofuels for transport. In 2009, hydropower—chiefly from large dams—accounted for 84 percent of all electricity generation. In many respects, this is a very impressive accomplishment.

In order to improve electricity access in underserved rural areas, as well as prepare for growth in overall electricity demand without increasing reliance on fossil fuels, Brazil is now considering the construction of additional dams. This could pose a number of risks:

- Threats to biodiversity and indigenous livelihoods could result from further large changes in river basins.
- Virtually all of Brazil's hydropower is transmitted by the national electricity grid. However, the grid has not yet been fully extended to remote areas in the Amazon basin. In many of these locations, decentralized supply alternatives—mainly small diesel generators—are used. These solutions are not without their problems—power generation costs are high (due to high costs of fuel and transportation) and service is often weak. On the other hand, the high costs of extending the electricity transmission and distribution infrastructure to these areas would not be reduced by the construction of new large dams.
- The construction of large dams has been shown in some cases to result in significant increases in greenhouse gas emissions—particularly in tropical areas, where large amounts of flora and fauna are flooded (both during and after the dams' construction), and release significant quantities of methane as they decay. Some of the dams that have already been constructed in Brazil have generated surprisingly large quantities of methane gas emissions—whose global warming characteristics are considerably more aggressive than those of carbon dioxide.
- The reliance on hydropower makes the country's energy balance vulnerable to shortages during periods of dry weather. Water rationing for households and businesses had to be introduced during a prolonged drought in 2001. Drought could become more frequent with climate change, reducing Brazil's hydropower generation capacity.
- Many of Brazil's hydropower generating facilities—including the Itaipu dam (the country's largest) on the Parana River on the border with Paraguay—are located far from the main centers of electricity demand. Relatively large transmission and distribution losses can result.

In light of these challenges, it remains to be seen how Brazil will reconcile expected increases in energy demand (estimated at 5 percent annually) and environmental conservation going forward.

Brazil has been a pioneer in large-scale biofuel production. The United States and Brazil together account for more than 80 percent of global ethanol output. However, in contrast to the US's corn-based technologies, Brazil produces ethanol from sugarcane—which is more commercially and environmentally sustainable (*inter alia* requiring fewer subsidies). Distilling ethanol from sugarcane is less land-intensive and uses less fossil fuel than distilling ethanol from corn; the energy yield of sugarcane-based ethanol is 4-6 times greater than the yield of corn-based ethanol.

Brazil's production of ethanol from sugarcane began with the launch of the National Alcohol Programme (*Proálcool*) in 1975. *Proálcool* paved the way for new commercial uses of sugarcane-based ethanol, one of which was for use as motor vehicle fuel. Most of Brazil's cars today run on a fuel mixture that contains 18-25 percent ethanol. So while ethanol accounts for only 8 percent of gasoline consumption in the United States, it comprises over half of gasoline consumption in Brazil. The use of sugarcane ethanol is reported to have reduced Brazil's energy-related greenhouse emissions by some 7 percent since 1975. Moreover, significant volumes of Brazilian ethanol are exported.

The programme's successes have been made possible by feedstock (sugarcane) availability, a supportive policy environment, and improvements in the efficiency of sugarcane and ethanol production. Until 1999, sugarcane cultivation was stimulated by government price supports and production and marketing quotas. Ethanol demand was boosted by legislation on fuel blending targets, and via subsidies to the Brazilian automobile industry to accelerate the more efficient use of ethanol.

Going forward, Brazil faces challenges of:

- Meeting growing domestic demand for ethanol while also maintaining its position as a major supplier on world ethanol markets (which are also growing rapidly); while also
- Mitigating the impact of growing:
  - Sugarcane production on the cost of land and other agricultural inputs—which could work at cross purposes with Brazil's food security policies; as well as
  - Allocations of land for sugarcane and food production on Brazil's forests, which are already suffering from the effects of deforestation.

Efficiency gains through technological improvements, such as crop rotation and greater use of sugarcane residues to generate electricity and feed cattle, are expected to ameliorate some of these tradeoffs. In the meanwhile, production of hydrocarbons in Brazil continues to rise, reaching 768 million barrels of oil and 24 billion cubic meters of natural gas in 2011.

Although under no formal international obligation to do so, Brazil in 2010 passed legislation to reduce greenhouse gas emissions by 36-39 percent 2020. The National Plan on Climate Change calls for the further expansion of Brazil's hydroelectric capacity, the continuation of the national ethanol programme, and the introduction of a low-carbon agricultural development programme.

Conclusion. Brazil continues to face important challenges in eradicating poverty, reducing inequality and social exclusion, broadening access to social services, addressing the nutritional needs of a growing and more prosperous population, and in balancing the imperatives of energy and food production with environmental conservation and the livelihoods of indigenous peoples and traditional communities. Nonetheless, impressive progress in meeting these challenges has clearly been made in recent years. Brazil's experience shows that, with a political commitment to sustainable, equitable, people-centered policies and programming, and through the coordination of many government agencies (in partnership with the private sector and civil society) to simultaneously address the multiple dimensions of poverty, rapid movement toward sustainable development is indeed possible. These are lessons that other countries—in the North as well as in the South—could take to heart.

Croatia: energy efficiency

Country context. To the millions of tourists who frequent its scenic Adriatic coastline and beaches every year, Croatia seems to be well on its way to capturing the promises of sustainable development and the green economy. However, there is another side of Croatia that the tourists may not see: large inefficiencies in energy use—particularly from public sector buildings, many of which were constructed under Yugoslav socialism when heat and electricity tariffs were held below cost-recovery levels. Energy imports contribute to the trade deficit that keep the kuna under pressure and slowed Croatia's recovery from the global financial crisis during 2010-2011.

In order to respond to global and European economic competition (Croatia is on course to join the European Union in 2013), it faces the imperative of reducing inefficient energy use, particularly in the public sector. As is the case in many countries emerging from state socialism, energy use remains wasteful: per unit of GDP, Croatia consumes 12 percent more energy than the European Union average. This brief case study describes how—with assistance from UNDP and the Global Environment Facility (GEF)—Croatia is doing this. It also describes how Croatia's energy efficiency programme is not limited to economic or environmental dimensions: it also has important social and governance components. Thanks to this programme, hundreds of new, 'green jobs' have been created; Croatian municipalities have been galvanized to find their own solutions to their local energy problems; and public awareness about energy use, climate change, and sustainable development has been raised to new heights.

Why an energy efficiency programme? Early in 2011, energy specialists in Croatia's Ministry of Justice noticed abnormally high rates of water use at Lepoglava Prison, the country's largest penitentiary. This alert prompted a probe of the underground pipes, some of which date back to when the facility was a monastery under Austro-Hungarian rule. A huge leak was located and fixed at a cost of $4,000; annual savings of $225,000 resulted. Without the metering of energy and water consumption introduced under UNDP's energy efficiency programme, this loss would have gone unnoticed.

The Lepoglava story is just one example of the savings that are being generated by Croatia's public-sector energy-efficiency programme. Started seven years ago with funding from the Global Environment Facility and with UNDP support, this programme has produced some $18 million in cost savings and cut annual greenhouse gas emissions by 63,000 tons of CO_2 equivalent, through measures costing little or nothing. Total cost savings are now set to rise exponentially as investments generated by the programme come on line.

As in many countries, buildings in Croatia are among the biggest contributors to climate change. At the project start, no policies existed to monitor or manage, much less reduce, energy use at any level of the Croatian public sector. First, the city of Sisak—Croatia's ninth-largest city, with a population of 50,000 and a legacy of polluting industries and lingering damage from Croatia's war of independence in the 1990s—agreed to serve as a site for energy savings investments piloted by UNDP and financed by the GEF. Over two years, 24 demonstration projects in public buildings in Sisak cut energy consumption by 13 percent, saving the city budget $220,000 per year.

The city of Sisak agreed to serve as a pilot site. In two years, 24 demonstration projects cut energy consumption by 13 percent and saved the city budget US$220,000 per year. The Sisak pilot also eliminated 780 tons of carbon emissions in 2010. © Gordana G. Gerber / UNDP Croatia

This initial success piqued the interest of officials in other Croatian towns. UNDP transformed this interest into public commitments by encouraging city mayors and county prefects to sign a colorful 'Energy Charter' in which they pledged to implement systematic energy management in the facilities under their jurisdiction. Within eight months, all 127 mayors and all 20 county prefects had signed on to the Charter, which is now on prominent display in virtually every city hall in Croatia. Following this lead at the local level, 15 of 16 government ministries made the same vow.

The programme works according to the following progression of steps:

- Energy efficiency managers within each public institution, and then for each individual building, are identified and trained. Some 10,000 Croatian civil servants have completed this training.
- A registry of public-sector buildings within a given area—under both central and local government ownership—is created.
- The buildings are included in the programme's energy management information system, which monitors energy and water usage.

The number of buildings included in this system has risen to nearly 6,000—more than half of Croatia's public-sector buildings. This monitoring is what makes possible the sort of successes seen at Lepoglava Prison. In addition, the programme has been instrumental in institutionalizing the use of energy audits in Croatia. When it began, energy auditing was an infant industry, with just three entities on the market. Spurred by the programme, under whose auspices 1,069 energy audits (covering 2.5 million square meters in 1,346 buildings) were conducted during 2006-2010, this industry expanded to 30 companies employing 150 specialists. Energy audits have stimulated energy-efficiency investment projects worth $30 million, underlining the potential not only for budget savings but also for future 'green job' creation in a country struggling to recover from the global financial crisis, with an unemployment rate of almost 20 percent.

The programme also embarked on an ambitious public information campaign about the need to reduce energy consumption and to share helpful tips and tools. This campaign centered on an animated character, Gašpar Energetić (whose name plays on the Croatian word for 'saver'), who helps his big-spending neighbour Trošimir save money by turning off the lights and using efficient electrical appliances. Gašpar also dispenses advice from his own Facebook page, which has 4,300 friends and counting. Gašpar stars in a short film aimed at children, 'Think of Tomorrow', which has been distributed in 500,000 copies in major newspapers, and is also shown during educational 'school hours' led by the programme. One of the most recent of these saw the country's popular President, Ivo Josipović, join seventh-graders at the Marin Getaldić School in Dubrovnik in a vigorous question-and-answer session on climate change. The President was even called to the blackboard to explain what his office is doing to save energy.

To complement these efforts, a network of information centers was set up to give citizens hands-on information and advice on energy efficient technologies for residential houses. These build on partnerships with private companies that produce energy efficient construction materials and appliances; companies fund the centers in exchange for the possibility to display their products. To date, 96 of these info-points have been established in 43 towns and 12 counties.

Programme impact:

- Energy use in some 7,000 buildings—more than half of Croatia's public-sector buildings *in toto*—is monitored under systems introduced by this programme.
- The programme through 2008 had produced some $18 million in cost savings and cut annual greenhouse gas emissions by 63,000 tons of CO_2 equivalent, through measures costing little or nothing.
- The public-sector energy audits introduced by this programme have stimulated energy-efficiency investment projects worth $30 million, creating hundreds of jobs.
- Since June 2011, the programme runs entirely on government funding—which has survived budget cuts during Croatia's prolonged recession following the 2008 global financial crisis. The total government contribution is expected to exceed $16 million, four times the $4 million in GEF funding.
- An independent evaluation conducted in May 2011 described the project's achievements as 'unique', not only compared to other Southeast European countries but also against the best performers in energy efficiency among European Union member states. The project, it said, 'introduced and established energy efficiency as a policy priority and practical tool for effective housekeeping in the whole public sector in the country'. Efforts are being undertaken to replicate the programme in Belarus, Serbia, and Tajikistan.

Nepal: decentralized renewables

Country context. Nepal is a small, landlocked, mountainous country, with roughly a quarter of its 30 million people living below the national poverty line. Despite significant hydropower potential, electricity meets only 2 percent of the total energy consumption. Instead, more than 80 percent of Nepal's energy consumption comes from traditional biomass, as nearly 85 percent of the population lives in rural areas. As a result, Nepal has one of the world's lowest per-capita electricity consumption levels: only 56 percent of the population (49 percent in rural areas) has access to on- and off-grid electricity; firewood is the main fuel source for cooking for two thirds of households. The heavy reliance on biomass has a negative impact on the environment (due to deforestation) and health (due to indoor air pollution), as well as additionally burdening women who are the primary fuel gatherers. Significantly expanding household access to reliable electricity services is therefore key to sustainable development in general, and poverty reduction in particular, in Nepal.

The Rural Energy Development Programme has introduced decentralized renewable energy services to some of the most remote parts of Nepal. By building micro hydropower systems and providing improved cooking stoves, the programme has provided reliable, low-cost electricity to large numbers of isolated, rural communities. In so doing, the programme has created new rural income- and employment-generation opportunities, improved health and environmental conditions, and strengthened local governance. In this and other ways, the programme demonstrates the benefits that can come from rural development programming that takes an integrated approach to economic, environmental, and social development challenges.

The programme was launched in 1996 as a small pilot initiative in five remote hill districts, with UNDP support. The programme was subsequently scaled up via the national Hydropower Development Policy of 2001, which focused on rural development via low-cost hydropower systems. The lessons learned from this programme were taken on board in the formulation of Nepal's National Rural Energy Policy in 2006, and subsequently in its national five-year plans.

As of 2010, the programme had:

- connected 59,000 households to micro hydropower installations;
- constructed 317 new micro hydropower plants, with 5.7 megawatts of installed capacity; and
- installed nearly 15,000 improved cooking stoves, 7,000 toilet-attached biogas plants, and 3,200 solar home heating systems.

Electrified houses. © UNDP Nepal

By the end of this year:

- modern energy services will have been made available to almost a million people in remote rural areas of the country; and
- 15 percent of Nepal's electricity will be generated from micro and mini hydropower plants.

The primary beneficiaries of the programme, which is now being extended to all 75 districts, are in rural communities, with particular attention to vulnerable communities like women, Dalits (often viewed as the lowest social caste, or the untouchables) and indigenous people. Over the next 20 years, the government wants to expand the share of electricity generated from micro and mini-hydro plants to 15 percent.

In addition to improving access to energy services, this programme has made possible significant progress in rural development. Research conducted by UNDP and Nepal's Alternative Energy Promotion Centre found that improved access to electricity in rural areas led to:

- an eight percent increase in household incomes in 2009;
- Reduced average annual household spending on energy to US$19, compared to US$41 spent by non-electrified households; and
- the creation of 40 new businesses for every new micro hydropower station brought on line.

In addition to supporting business formation and raising rural incomes, this research found increases in school enrolment rates (particularly for girls), and improvements in child and maternal health, in water quality and access to modern sanitation, as well as in environmental quality. Reductions in time spent gathering water and firewood also allowed women to more actively participate in socio-economic life. UNDP's 2011 *Review of Energy Practices and Lessons Learned* in the Asia-Pacific region found that some 2000 biogas masons are employed by the Biogas Sector Partnership in Nepal, who in turn employ apprentice masons—illustrating the employment generation dimensions of the programme.

While similar decentralized renewable energy projects can be found in many countries, Nepal's success in scaling up activities initiated under the Rural Energy Development Programme stand out. Scaling up efforts benefited from:

- *National ownership and commitment*. The programme has since its inception benefited from a strong, long term commitment from the national government. The establishment of the Alternative Energy Promotion Centre to lead Nepal's rural energy programming played a crucial role in scaling up the micro hydro and improved cooking stove pilots. This commitment has also been reflected in the creation of favourable policy, legal, and financing frameworks, many of which were drafted by the Centre. The monitoring and evaluation systems employed the Centre (with UNDP support) have documented the social and economic costs and benefits of rural electrification programming, promoting the learning that made possible the scaling up.

- *Local engagement*. This approach would not have been possible without central government support for decentralized service delivery. Central budget subsidies, tax exemptions, and other financial instruments have helped catalyze co-financing from donors, local governments, and communities. In addition to providing substantial matching funds to support renewable energy programming, local governments have worked to ensure the integration of this programming into local development planning, rather than being stand-alone, donor-funded projects. Local government financing was also instrumental in supporting the capacity development needed for this programming to work.

- *Catalytic finance*. The Nepal Electricity Authority committed to provide up to 80 percent of the financing needed to cover capital investments required in rural electrification construction costs, where communities were responsible to share 20 percent of the cost of grid extension. This commitment helped attract long-term matching funding from such partners as the Danish International Development Agency, the World Bank, UNDP, NGOs, local governments, and ultimately banks, as well as from local governments, who contributed financing under subsidy provisions and for capacity building. This facilitated the subsequent significant contributions by communities and households to implement rural energy systems and to pay for energy services delivered. Communities provided cash, took out bank loans, and gave in-kind contributions, such as by digging channels and collecting sand, stone, and wooden poles for micro hydropower plants. As a result, while public funding accounted for well over 90 percent of total programme finance at the start, by 2006 communities were contributing almost 40 percent of the total funding. Without this community funding, the rural electrification programme could not have been scaled up.

- *Community mobilization and local partnerships*. The Rural Energy Development Programme built on existing local governance structures to institutionalize rural energy service delivery. Programme activities were designed according to principles of participation, transparency, inclusion, and consensus decision making. Community empowerment has been key to ensuring both effective local service delivery and longer-term financial sustainability. Participants were organized into village-level functional groups based on common interests (e.g., micro hydropower, income generation, forestry, biogas, poultry farming) that included representative of vulnerable groups. Following six

months of capacity development and successful programme activities, community groups could register as legal entities (e.g., as micro hydropower cooperatives). Training and collaboration with local entrepreneurs and civil society organizations provided households with better access to micro-finance services.

- *Capacity development at all levels*. Attempts at scaling up successful pilot projects often face human resource constraints, as well as difficulties in ensuring that lessons learned are consistently applied during the scaling up. The Rural Energy Development Programme has therefore focused on capacity development both at the national level (to create the appropriate policy environment) and at the local level, to help community members to better design, construct, and manage new energy systems, and ensure effective service delivery—including via community mobilization. Capacity development activities have focused on organizational and skills development, training in environmental and technological management, project design and implementation, monitoring and evaluation, resource mobilization, and vulnerable community empowerment. In fact, of the $14.3 million delivered under the programme during 1996-2006, 56 percent was spent on capacity development activities. The improvements in management skills delivered by these activities helped reduce per-unit costs (associated with the deployment of new hydro power stations) by 73 percent during this time. UNDP's capacity development expertise was used to identify successful capacity development activities undertaken by the Rural Energy Development Programme, both for scaling up in Nepal and for potential replication in other countries. Countries that have sought to learn from Nepal's experience include Afghanistan, Bhutan, Cambodia, Kenya, Mongolia, Pakistan, Tajikistan, Tanzania, and Uganda.

Programme impact: As of 2010, the programme had:

- connected 59,000 households to micro hydropower installations;
- constructed 317 new micro hydropower plants, with 5.7 megawatts of installed capacity; and
- installed nearly 15,000 improved cooking stoves, 7,000 toilet-attached biogas plants, and 3,200 solar home heating systems.

By the end of this year:

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- reduced average annual household spending on energy to US$19, compared to US$41 spent by non-electrified households; and
- the creation of 40 new businesses for every new micro hydropower station brought on line.

Mongolia: inclusive finance for sustainable development

Country context. Mongolia is a mineral-rich landlocked country bordering China and Russia; it has one of the world's lowest population densities, with 2.8 million inhabitants in a land of 1.6 million square kilometres. According to the World Bank classification scheme, Mongolia is a lower middle-income country; it ranked 110th out of the 169 countries listed in UNDP's 2011 human development index.

Mongolia's economic growth model is resource-based, with heavy reliance on extractive industries, mainly copper, gold, and coal. Despite steady GDP growth, Mongolia's income poverty rate scarcely declined during 2002-2008 (from 36.1 to 35.2 percent), while the gap between rich and poor increased markedly. Income inequality, as measured by Gini coefficient, increased from .32 to .366 during this time; more than half of Mongolia's poor households are the working poor.

In 2010, extraction work at Oyu Tolgoi, one of the world's largest gold and copper deposits (with an estimated mine life of 40 years) became operational. Likewise for Tavan Tolgoi, which is expected to produce some 30 million tons of coal annually for the next 30 years. Operations at these sites could double Mongolia's GDP in the coming years. However, due in part to the ecological side effects of the country's mining industry, environmental degradation has become a critical development challenge. Unsafe air pollution levels in Ulaanbaatar city, especially in winter months, contribute to higher incidence of respiratory illnesses, especially among children. Mongolia is also potentially quite vulnerable to the adverse effects of climate change; in recent years, droughts and severe winters have become more common. As more than 80 percent of the country's land area is highly vulnerable to degradation; the proportion of people living on degraded lands in Mongolia is the highest in Asia. By threatening crops and animal husbandry, land degradation is posing challenges for food security and rural development.

This places a premium on efforts to transform Mongolia's resource-based economic growth—the benefits of which are not always equally distributed, and which can leave the country vulnerable to climate change and fluctuations in global commodity prices—into sustainable development that benefits all citizens, and which does not bring with it unacceptable environmental costs, particularly for future generations. Avoiding the 'resource curse' for Mongolia requires expanded financing for climate change adaptation, economic diversification (particularly for infrastructure development, the expansion of non-extractive value adding activities, and improvements in health and education), and the creation of decent 'green' jobs—especially in rural areas and other cities besides over-populated Ulanbaataar.

Enter XacBank. The experience of Mongolia's XacBank, as an institution promoting inclusive finance for sustainable development in developing countries, is particularly noteworthy.

- XacBank was originally established in 1999 (with support from UNDP and other external partners) as a non-bank microfinance institution, providing loans (averaging around $141) to some 4000 clients, many of which were small businesses and herders.

- Following the 2001 passage of national employment legislation emphasizing job creation for vulnerable groups, XacBank began targeting the vulnerable non-poor who were just above the poverty line, and increased the loan limit for small and medium enterprises.
- Its 2001 inclusion into TenGer Financial Group coincided with XacBank's transformation into a commercial bank, making possible the expansion of its operations.
- In 2006 XacBank became the first commercial bank in Mongolia to be rated by Moody's (the international credit rating agency); its support for modern corporate governance practices helped XacBank to join the UN Global Compact in 2007.
- By 2011, XacBank had become Mongolia's fourth largest commercial bank, with 85 branches serving some 250,000 clients. Other microcredit institutions and commercial banks have followed in XacBank's footsteps, improving access to finance for small businesses and vulnerable groups.
- Other countries that have benefited from XacBank's experience (in the form of training and staff exchanges) include Bosnia and Herzegovina, Cambodia, China, El Salvador, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, Timor-Leste, and Uganda.

Thanks in part to its partnerships with such institutions as the Mongolian Women's Association, and Mongolia's 75 savings and credit cooperatives:

- About 24 percent of XacBank's clients receive loans under $300; 70 percent receive loans under $2,500. Less than 2 percent of its clients provide loan collateral.
- In 2008, XacBank introduced a non-collateralized micro loan service targeting financially marginalized peri-urban citizens.
- Some 53 percent of XacBank's clients reside in rural areas; its AMAR ('easy' in Mongolian) mobile banking system had allowed XacBank to expand its client base in isolated rural areas to some 60,000 customers in 2010. XacBank management hopes to cover more than half of the country's population with AMAR by the end of this year.
- Some 58 percent of XacBank's clients are women; XacBank has signed the Women's World Banking network's pledge to "support the empowerment of low-income women as entrepreneurs, leaders, and partners for change". In partnership with the Mongolian Women's Association, XacBank has been providing group (as well as individual) loans to vulnerable rural women since 2007.
- In collaboration with Mongolia's Ministry of Social Welfare and Labour, as well as with national media and private companies, XacBank since 2008 has been providing financial literacy trainings in more than 130 schools.

Its partnership with the savings and credit cooperatives also allows XacBank to provide institutional development and technical assistance services, with a particular focus on business planning, accounting, programme software, and credit risk management. Cooperatives whose institutional risks are appropriately assessed receive wholesale credits from XacBank, for on-lending to local communities in remote rural areas.

Recognizing the growing commercial importance of green business, XacBank in 2009 became the first bank in Mongolia to introduce developed energy saving lending products. Working with Microenergy Credits and other financial institutions to purchase the greenhouse gas emissions reductions generated by energy efficiency projects, XacBank's Eco-Product unit has to date provided some 4,000 'green' loans,

A young woman adds the finishing touches to handcrafted wheel in Mongolia. © UNDP Mongolia

financing the procurement of efficient cooking stoves, solar heating systems, housing insulation, and the like. XacBank has also introduced a sustainability reporting system under the Global Reporting Initiative, which allows the bank to track the impact of its clients' activities on the environment, and to encourage its clients to adopt 'green' technologies (and social services). Microloan clients who have been with XacBank for more than 180 days and who fulfill more than 50 percent of the bank's sustainability indicators receive an interest rate discount.

Conclusion. XacBank will not, by itself, set Mongolia on the path to sustainable development. However, its experience in blending different funding sources to offer inclusive finance to vulnerable households—with a growing portfolio of environmental loans—shows how the private sector can play a large role in making sustainable development happen.

Namibia: community-based resource management

Country context: Although its rich mineral resource base affords Namibia one of the highest per-capita income levels in Africa, this wealth is not shared equally throughout the country. Poverty and inequality remain crucial development challenges, as Namibia was ranked 120 out of 187 countries surveyed in UNDP's 2011 Human Development Report. These challenges are particularly pressing for many local communities who do not directly benefit from the country's mineral bounty, and whose livelihoods depend on access to natural resources (land, forests, fisheries). For these communities, the management of Namibia's rich biodiversity—elephants, rhinos, giraffes, buffalos, lions, leopards, and zebras (some of which are endangered species)—and its natural landscapes, can be an important source of development opportunities.

Natural parks and protected areas have played important roles in Namibia's natural resource management for more than a century. The first official Namibian protected park (an area protected from human activity) was established in 1907, under colonial rule. However, prior to independence, communities living near and around parks were totally excluded from them. No access or benefit sharing was permitted; the parks were managed in accordance with the 'colonial army' policing principle. The advent of independence in 1990 made possible a transition to a more inclusive approach to managing these resources.

Some 20 state-run protected parks and reserves, which today cover about 17 percent of Namibia's territory, benefit from protection both in the national constitution (which stipulates that "*The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future*") and from the global Convention on Biological Diversity, which came into force in 1992.

However, concerns that local communities and other stakeholders have not fully benefited from these parks have lead to further progressive changes in their management, to create more income-generation opportunities for the communities located within or close to the parks—many of whose members support themselves from subsistence agriculture. Since the mid-1990s, 'community-based natural resource management' frameworks—under which households or community-based organizations can apply for land concessions within these parks—have increasingly guided protected areas management. Concessions allow local community members to hunt, fish, grow crops, graze livestock, and undertake tourism activities within protected areas—in exchange for committing to doing so in an environmentally sustainable manner. Tourism can provide particularly important income- and employment-generation opportunities for local communities: the more than one million tourists that visited Namibia annually contributed some 3-5 percent of GDP during the 2003-2008 period. A UNDP/GEF-financed study found that a significant share (16 percent) of the wealth generated by the parks accrues to unskilled workers in local communities.

Etosha National Park's waterholes with abundant wildlife attract tourists from all over the world. With support of the UNDP/GEF supported Strengthening the Protected Area Network Project, the Namibian government has unleashed the PA's potential for poverty alleviation and rural economic development. © Courtesy of J. Sneesby and B. Wilkinson for the SPAN Project.

Efforts to increase the share of this income that is captured by local communities face a number of challenges, including inadequate access to finance. Nonetheless, Namibia's 'Vision 2030' national development strategy calls for the scaling up of this approach, via the expansion of the protected areas network and their more integrated management, including via stronger partnerships with private tourism operators. Namibia's government is likewise negotiating with neighboring countries (Angola, Zambia, Zimbabwe, Botswana, South Africa), to develop new and expand existing trans-frontier (cross-border) conservation areas.

Conclusion. Namibia's experience with community-based resource management shows that—in exchange for access to protected areas for income-generating purposes—subsistence farmers and local communities can become co-responsible for ensuring these areas' ecological sustainability. It also demonstrates the importance of local engagement for poverty reduction and sustainable livelihoods.

Niger: reforesting the Sahel through farmer-managed natural regeneration

Country context. Niger is one of the world's poorest countries: it was ranked 186 out of the 187 countries included in UNDP's 2011 human development classification. Many of Niger's development challenges are linked to its natural topography: deserts comprise three quarters of its land area, leaving this landlocked country exposed to recurring drought and climate variation. The natural risks of the Sahel are aggravated by demographic pressures: Niger's annual population growth rate is above 3 percent. The resulting problems of deforestation and overgrazing, which exacerbate desertification and soil erosion, generate endemic food security issues. Droughts in 2010 and 2012 have once again brought these issues to forefront of international development and humanitarian concerns. Preserving the country's fragile land resources and modernizing its farming practices are therefore crucial to Niger's development prospects.

Reforestation initiatives are often pursued by governments and development agencies in deserts and drylands. In addition to acting as a windbreak, trees help to retain soil moisture and draw nutrients to the topsoil. Falling leaves moisturize and fertilize the soil and protect crops' seeds. Trees can also provide food (edible fruits and leaves), fodder for livestock, and medicinal plants, as well as wood for fuel, timber, and construction and wood products. In addition to supporting in-kind consumption, forestry resources can generate output that households can sell on local markets.

'Farmer-managed natural regeneration' of Niger's forests. The government and development community in Niger have for decades been pursuing reforestation initiatives, often by transplanting trees that had thrived in other arid climates. However, by the early 1980s, expensive reforestation programmes based on the cultivation of imported seeds and saplings were increasingly recognized as ineffective. With support from the 'Serving in Mission' NGO, small numbers of farmers in southern Niger began cultivating stem growth from the native tree stumps that were left after farmers cleared their fields.

In 1983, the Maradi Integrated Development Programme was launched in one of Niger's poorest, most heavily populated areas, scaling up 'farmer-managed natural regeneration' approaches to reforestation, soil conservation, climate risk management, land reclamation, and rural development. The programme, which subsequently became 'Sowing Seeds of Change in the Sahel', was based on the premise that, if appropriately pruned and protected, native trees can grow and promote soil conservation, even in the unforgiving conditions of the Sahel. These farmer-managed natural regeneration approaches, which rely on traditional knowledge and local resources, are based on experimentation and adaptation by the farmers themselves. For these approaches to work, three steps must be followed:

- Before clearing land for crop-planting, farmers select the tree stumps that they will protect and make grow after clearing. This choice is made according to tree characteristics and community needs (e.g., for fruit, livestock fodder, firewood, etc.).

A local woman participates in the World Food Programme (WFP)'s food-and-cash for work programme in the village of Dan Kada, Maradai Region, Niger. © Phil Behan / UN / WFP

- Once the stumps have been selected, farmers identify the strongest stems to be cultivated and protected. Weaker stems and side branches are removed.
- New stems that appear are likewise removed, in order to protect the strongest ones.

Although they are labour intensive, these approaches do not require particular horticultural expertise or large financial investments; farmers use stumps and roots that are already present. Results appear within one year of the application of this technique, allowing for rapid identification and cultivation of successful tree stumps. This can accelerate the reforestation process.

The application of farmer-managed natural regeneration in southern Niger is now viewed as an important success. Recent research estimates that farmer-managed natural regeneration has reforested 5 million hectares (about 4 percent of the country's land area), with the affected areas benefitting from rapidly growing parkland in both forest cover and density. These programmes are estimated to have increased cereal yields by 100 kilograms per hectare in 2009. The resulting improvements in food security—as well as in animal productivity, biodiversity, and expanded income generation through sales of firewood and timber—improved the livelihoods of some 2.5 million people. They also underscore the importance of engaging local communities in, and applying local resources to, the search for solutions to local development problems.

Initial efforts to encourage the cultivation of cut tree stumps faced resistance from farmers who believed that clearing fields brought higher crop yields. After a few years, however, spontaneous scaling-up began to occur, as growing numbers of households understood that these regenerating methods could make their farming and income-generating activities more sustainable. Donor assistance, especially in 1985 and 1989 through the 'food for work' programmes introduced to tackle the famines in those years, helped

fund experience-sharing activities as well as village-scale projects. New community governance structures were developed to support and manage collective reforestation initiatives, which also benefited some marginalized groups who were not allowed to participate in community resource management decisions. The national authorities helped create the enabling environment needed for scaling up by suspending the enforcement of tree cutting regulations in the mid-1980s; a larger reform of the country's forestry regulation was passed in 2004. Still, the decisive role in scaling up farmer-managed natural regeneration practices was played by rural households themselves, who understood that community action in support of reforestation could improve their living standards.

In addition to helping to galvanize local communities, farmer-managed natural regeneration practices are helping to empower women. As they are less likely than men to leave rural homesteads in search of work, women have played key roles in making these approaches work in practice. Thanks to the extra wood and food produced in their homesteads and communities, women spend less time and money procuring firewood and food, leaving more time and money for other productive (or leisure) activities. They can generate additional income from the surplus wood obtained from the trees and from the leaves and fruits that can be sold.

Conclusion. Reductions in poverty and food insecurity in arid climates like the Sahel can not be separated from challenges of sustainable land and forestry resource management, or of community engagement. Examples like Niger's show that, to be truly sustainable, economic development initiatives must be accompanied by sustainable resource management and community mobilization for social development.

South Africa: 'Working for water'

National context. Despite benefitting from rapid economic growth since the democratic transition in 1994, South Africa continues to face large inequalities in incomes and wealth; access to economic opportunities and basic services for poor households remains limited. Some of these inequalities have been growing during the past two decades: the World Bank reports that the Gini coefficient measuring income inequality rose from .64 to .67 during 1995-2008. Women are particularly affected by such imbalances: according to World Bank data, the unemployment rate in 2009 was 26 percent for women, as opposed to 22 percent for men.

A woman collecting water from a rural water pump near Ulundi, South Africa.
© Trevor Samson,2002 / World Bank

While South Africa benefits from some of the world's richest biodiversity, poverty and environmental challenges—particularly water shortages and land degradation—are concentrated in rural areas. UNDP's Human Development Report Office reports that, while more than 90 percent of the population had access to improved water sources in 2008, only 77 percent had access to modern sanitation facilities, and this figure drops sharply in rural areas. Water access and quality issues have been aggravated by the spread of some 200 invasive plant species (acacia, pine, and eucalyptus trees, water hyacinth), which are estimated to be present in about 10 percent of South Africa's territory, and to be growing by 5 percent a year. In addition to consuming large amounts of water (compared to native species) that could otherwise go for household use or food production, these invasive species threaten native flora and fauna by releasing large amounts of nitrogen into water sources, changing the chemical balance and limiting the penetration of sunlight. As well as being important in its own right, protecting native ecosystems and biodiversity can improve access to water and sanitation services, as well as food security, in rural areas.

Working for Water was launched in 1995, immediately after South Africa's transition from apartheid to constitutional democracy. It is a water-clearing public works programme that offers employment to members of vulnerable groups. Citizens from communities affected by invasive plants are recruited on short-term public contracts to help clear water catchments. 'Hacking teams' use mechanical, chemical, and biological tools to remove invasive plants. Recruitment efforts focus on marginalized groups: employment targets include 60 percent women, 20 percent youth, and 2 percent disabled. Employees also receive reproductive health and HIV-AIDS awareness training, as well as access to childcare facilities and information on micro-entrepreneurship.

Since the programme's inception, more than one million hectares have been cleared by *Working For Water* hacking teams. Both water availability and stream flows in the cleared areas have increased. Public awareness has been raised, while better water availability and stronger local ecosystems have boosted land productivity, notably in areas where livestock are kept. Some 20,000 jobs are created annually under this programme, and while some studies suggest that the targeting of employment opportunities (to the poor) could be improved, other research indicates that half of the workers recruited under this programme were unemployed prior to their participation. Most surveyed workers report that the programme has had a positive impact on their lives, thanks to improvements in their self-esteem.

Conclusion. '*Working for water*' is an example of the innovative approaches to social programming that are increasingly being employed in developing countries. By combining sustainable water management and biodiversity protection with social protection and public works programming, this programme shows how budget spending can invest in natural capital by underwriting economic and social development.

Bhutan: sustainable development

Country context. A landlocked, sparsely populated developing country located in the eastern Himalayas, Bhutan has fragile mountain ecosystems and is susceptible to earthquakes, landslides, floods, river erosion, forest fires, windstorms, and glacial lake outbursts. Glacier melt in the Himalayas (exacerbated by climate change) is increasing short-term flood risks, while raising the longer run specter of water shortages, threatening hydropower production as well as people's livelihoods. While IMF data indicate that Bhutan's per-capita GDP nearly tripled during 1990-2010, World Bank data report a literacy rate of 53 percent in 2005; and Bhutan's per-capita gross national income in 2010 remained below $1900. Bhutan's development prospects are therefore closely associated with the country's ability to manage its natural resource opportunities—and environmental risks.

Farmers thresh their rice harvest in a field near Punakha, Bhutan. © Gill Fickling / UN Bhutan

National policy frameworks for sustainable development. This has led Bhutan to put environmental sustainability at the heart of national development planning and welfare accounting. For example:

- Bhutan's socio-economic development has long been guided by the 'gross national happiness' metric, which integrates equitable socio-economic development, poverty alleviation, good governance, environmental conservation, and the preservation of cultural values within a holistic approach to the national welfare.

- Environmental conservation is likewise enshrined in Bhutan's constitution: Article 5 makes Bhutanese citizens responsible for protecting the natural environment, conserving Bhutan's rich biodiversity, and preventing all forms of ecological degradation. In order to ensure the conservation of the country's natural resources and prevent degradation of the ecosystem, Article 5 also calls for the forestation of at least 60 percent of Bhutan's land area, in perpetuity. In 2010, some 70 percent of total land area was forested—a 6 percent increase over 1995. Protected areas (including biological corridors and conservation areas) covered 51 percent of Bhutan's land area in 2010—more than doubling the 22 percent share reported in 1995. Because its dense forests act as carbon sinks, Bhutan actually reports negative net greenhouse gas emissions. Bhutan's pledge to remain carbon neutral (made at the global Copenhagen climate meeting in December 2009) underscores the government's commitment to environmental conservation.

Bhutan's experience shows that an emphasis on environmental sustainability need not preclude poverty reduction: the share of people living below the national poverty line dropped from 36.3 percent in 2000 to 23.2 percent in 2007; and the country is on track to meet Millennium Development Goal 1 of halving the proportion of people living below the national poverty line by 2015. Bhutan has also made rapid progress in extending improved water and sanitation services; near universal coverage of these basic services is expected by 2015. On the other hand, rural poverty, which is a key theme of Bhutan's Tenth Five Year Plan (2008-2013), continues to be a serious challenge (especially in remote areas).

Conclusion. Bhutan's experience shows that it is possible for lower-middle income countries to combine robust national environmental conservation efforts with rapid economic growth and poverty reduction. Doing so requires leadership, and a national governance framework capable of integrating economic, environmental, and social development priorities.

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Bottom: Caption: Women working in a field of sea-buckthorns, an important natural resource used for the prevention of soil erosion and the production of food and medicinal products. The UNDP Altai-Sayan Project works to preserve the biodiversity of the region and has helped Mongolian farmers by converting unused land into an agricultural park. © Eskender Debebe / UNDP

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