



United Nations Development Programme

ACCELERATING PROGRESS TOWARDS THE MILLENNIUM DEVELOPMENT GOALS

UNDP's Work in Environment and Sustainable Development

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FOREWORD

As heads of state convene on the occasion of the MDG Review Summit in September 2010, the world has but five years left until the deadline for the Millennium Development Goals (MDGs). Now more than ever it is crucial that the world community re-commit itself to the MDGs, and indeed, acceleration and sustainability of MDG progress.

UNDP's highest priority is to support our partners in their efforts to achieve the MDGs. One key way in which we do this is providing support for country-led efforts to integrate environment and energy concerns into development planning and initiatives at all levels. In particular, as climate change threatens to undo decades of progress toward poverty reduction and requires that we make decisions about development options under conditions of unprecedented uncertainty and complexity, integrated and holistic approaches to development are more important than ever.

In this spirit, we have prepared the following booklet, which outlines the critically important, but often under-appreciated, role of environment and energy in spurring progress across all the MDGs, not only MDG7. The purpose of the booklet is threefold: 1) to demonstrate the importance of the environment and energy across multiple MDGs; 2) to share experiences in this arena as contribution to the MDG Review Summit; and 3) to highlight some of the ways in which UNDP is equipped to offer support in this regard.

As this booklet shows, investing in the sustained ability of natural ecosystems to provide the services that are fundamental to human life and livelihoods, together with investments to increase the access of poor people and communities to clean, reliable, affordable energy services, is a viable strategy for accelerating progress toward all the MDGs. And even more important, such investments are vital to sustaining the progress the world has already achieved—gains which are under threat of erosion from unchecked environmental degradation and the impacts of climate change. The MDG Review Summit provides a powerful opportunity to share these insights and draw on related experiences and lessons learned to forge new pathways to attainment of the MDGs over the next five years.

The ongoing global climate change negotiations and the upcoming Earth Summit in 2012 also represent key processes to spur broader partnerships, innovative solutions and new thinking around sustainable development pathways. Therefore, these various dialogues need to converge so that resources and knowledge can come together to better serve common development objectives.

We at UNDP stand ready to join with partners in governments, donor agencies, civil society, local communities, and the private sector in seeking the way forward to accelerated and sustainable progress on the MDGs. We are poised to collaborate and assist with nationally led efforts to build on the momentum of this historic event. Together we can chart new development paths capable of providing a sustainable stream of benefits and opportunities for the world's people, especially for the poorest.

A handwritten signature in black ink, reading "Vandeweerd", is placed above the name of the signatory.

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I. INTRODUCTION

The Millennium Development Goals (MDGs) represent the world's commitment to address global poverty across its many dimensions, from reducing the terrible toll of childhood death due to disease and hunger to preserving the environment for future generations.

All of UNDP's work is, at its heart, directly linked to poverty reduction and achieving the MDGs. Environment and energy are central to UNDP's mission. Poor people depend crucially on the environment, natural resources, and energy services to improve their lives. There cannot be true progress towards poverty reduction and the MDGs without addressing environmental and energy challenges. Moreover, the consequences of climate change threaten to reverse development progress in many parts of the world, unless urgent actions are taken. Put simply, there will be no development, if we do not address these environmental and energy-related challenges.

The following report showcases the results of 'UNDP in Action' in the areas of environment, energy, and climate change. Timed specifically for the occasion of the MDG Review Summit in September 2010, this report presents an overview of UNDP's work on environment and energy and how such efforts are helping to accelerate achievement of the MDGs. By highlighting 'what works' on the ground—from technical and policy advice and solutions to cross-cutting issues such as capacity development, gender equality, and South-South cooperation—the report aims to be an informative contribution to discussions at the MDG Review Summit as well as follow-up actions.

The report is structured as follows. The first section sketches the interconnections between environment, energy, and achievement of the MDGs—demonstrating how investments in the capacities of poor people and communities to sustainably manage the ecosystems on which their livelihoods depend can help countries reach multiple MDGs and sustain this progress over time.

The next section of the report presents the strategic orientation of UNDP's work on environment and sustainable development. It lays out the four cross-cutting themes that underlie UNDP's work in this area, as established in UNDP's Strategic Plan 2008–2013. These are: mainstreaming environment and energy into national development planning; catalyzing environmental finance; addressing climate change; and promoting local action. These four themes aim to promote and support sustainable development options that can help improve human well-being, consolidate and safeguard the gains already achieved, and accelerate progress toward the MDGs by 2015.

The final section of the report looks at several thematic areas in which UNDP's work on environment and energy is focused: energy access, safe water and sanitation, biodiversity, sound land management, and sound management of chemicals. While these are not the only environment and energy related thematic areas in which we work, these selected examples provide clear illustrations of how our efforts support progress across all the MDGs.



II. ENVIRONMENT AND ENERGY FOR THE MDGs

The Importance of Poverty-Environment Linkages to Accelerating Achievement of the MDGs

The confluence of climate change and ecosystem decline in the face of pervasive and persistent poverty has brought a new urgency to the MDGs.

Sound and equitable management of the environment is integral to pro-poor growth and achieving the MDGs, in particular to eradicating extreme poverty and hunger, reducing child mortality, combating major diseases, and ensuring environmental sustainability. Evidence shows that investing in the environment makes strong economic sense and is critical to expanding the poor's opportunities to lift themselves out of poverty. Yet, the Millennium Ecosystem Assessment has found that, globally, 60 percent of the environmental services rendered by ecosystems—such as the provision of freshwater, air and water purification, climate regulation, and pest regulation—have been degraded. Climate change will add new pressures on ecosystems, intensifying many of these trends.

The profound connection between environment and poverty is becoming clearer as the impacts of climate change manifest. Climate change will likely exacerbate instability of food and fuel prices, hitting the poor hardest. Even as global demand for natural resources continues to rise, climate change will impose new constraints on the availability of water and land, affecting the productivity of agriculture, fisheries, and forestry. With minimal assets and high reliance on nature for their livelihoods, the poor will suffer most. Efforts to accelerate progress towards the MDGs must take account of the rapidly changing development landscape transformed by the challenges and opportunities posed by climate change and ecosystem decline.

Environmental trends—including ecosystem degradation, pollution, and now climate change—pose increasing health risks for the poor.

The poor and young children are increasingly exposed to environmental health risks and hazards from dirty air and contaminated water. According to the World Health Organization (WHO), 24 percent of the overall burden of disease worldwide, and 23 percent of all deaths, can be prevented through environmental interventions, especially improvements in water, sanitation, hygiene and indoor and urban air quality. Today, environment-related health problems such as diarrhea, malaria, and acute respiratory infections remain the top killers of children under five in developing countries. Every year, two million deaths—mostly women and children—die as a result of indoor air pollution from household use of traditional biomass fuels and coal. Malnutrition, an important contributor to child mortality, is often due as much or more to unsafe water, bad sanitation and disease than to insufficient food production. For many developing countries, the annual economic burden from poor environment-related health outcomes amounts to 2–4 percent of GDP. When malnutrition linkages are included, these impacts—which affect children's learning and cognitive abilities—may be as high as 9 percent of GDP in some countries of Sub-Saharan Africa or South Asia. Projected changes in the incidence, frequency, intensity, and duration of climate extremes will increase the burden of malnutrition, malaria, and diarrheal diseases.



The burden of adapting to climate change will fall most heavily on the poor due to their high reliance on natural resources.

Poor people, particularly women, rely heavily on natural resources for their livelihoods. It is not uncommon for poor families to obtain one-half to two-thirds of their total income from nature. More than 70 percent of the 2.6 billion people living on less than \$2 per day live in rural areas, where many depend on agriculture, for which access to fertile soil and predictable water supplies is essential. The landless and those whose land tenure is insecure are even more dependent on a wide range of common property natural resources, such as fisheries or state-owned forests or rangelands. Insecurity of land and resource tenure is a particularly critical issue for poor women, whose rights and access are widely disregarded or nonexistent. Because of their high reliance on nature, the poor, and especially poor women, face the most immediate climate adaptation challenge, yet possess the most limited means to adapt—further constraining their ability to lift themselves out of poverty or to avoid falling into (deeper) poverty.

Better ecosystem management and innovative technological solutions are needed to enable climate adaptation and reduce the vulnerability of the poor, and to maximize the contribution of natural resources to growth and development.

Case studies show that efforts to restore and sustainably manage ecosystems can raise their productivity and simultaneously increase the cash and subsistence income they yield to poor families. Sustainable farming, fishing, and grazing practices can also increase the biological stability of ecosystems, increasing their resilience to climate stresses and thereby reducing the poor's vulnerability. For example, appropriate plowing and planting techniques can improve soil moisture and increase soil organic content, allowing farmers to more efficiently use scarce water resources and reduce erosion. Good ecosystem management practices, when pursued systematically and supported by innovative technologies and appropriate technical and financial services, can greatly increase the earning potential of nature-based livelihoods, boosting their contribution to the rural economy.

Pro-poor, gender-sensitive development centred on natural resources can be pursued at a local, community-level scale and at a national scale. Both approaches are necessary for maximum poverty reduction.

Most successful nature-based enterprises of the poor arise at the local level, often taking advantage of community-based efforts to manage a common resource, whether irrigation water, forest resources, medicinal plants, or nature tourism. In addition to generating income, such enterprises bring empowerment, increased capacity, and other benefits. Natural resources also can generate income and support development at a national level, through revenues generated by large-scale forest and fishery concessions, or oil and mineral leases. For this industrial-scale approach to be pro-poor, countries must re-invest their natural resource revenues in poverty reduction programmes and initiatives.



SCALING UP ECOSYSTEM-BASED INITIATIVES TO ACCELERATE MDG ACHIEVEMENT

Action at the local level—with local organizations as the key actors—underpins the success and sustainability of most environment and development initiatives. Decades of development experience demonstrate that poverty reduction strategies and interventions—and now efforts to mitigate and adapt to climate change—cannot succeed without being rooted in the perspectives, demands, capabilities, and actions of such organizations. Moreover, experience has shown that development and action on climate change are not gender-neutral, and improve with a gender-aware, -responsive, and -equitable approach.

To achieve significant impact on a national and global scale, local ecosystem-based initiatives must be scaled up, both by increasing the number of such initiatives and by increasing the size and efficacy of individual local initiatives. Otherwise they will remain isolated examples of success, with little benefit beyond local participants.

Locations where considerable scaling has occurred show that, when ecosystem initiatives attain scale, they can bring landscape-level change to ecosystems, create a social ferment that spreads among communities, and reshape local economies—a synergy of benefits that can reduce the vulnerability of rural communities and ecosystems.

Supporting and scaling up local ecosystem-based initiatives—and recognizing the critical role of local organizations therein—represents one of the most promising approaches to ‘localizing’ the MDGs and accelerating their achievement. The magnitude and significance of benefits varies widely. In some cases, benefits may be so substantial they allow a family to rapidly improve its economic and social standing, such as when an initiative creates employment opportunities where none existed before. More typically, benefits are incremental in their effects, reducing economic vulnerability and increasing social connections.

Even if small in magnitude, benefits will be significant in the context of the household economy if they allow a family to accumulate assets, become less socially isolated, obtain more secure access to critical natural resources or markets, or pay for something previously out of reach, such as school fees.

Successful initiatives frequently facilitate local infrastructure projects, such as water and sanitation systems, schools, and health clinics—activities that directly support education and health goals. In addition, a frequently cited use of initiative-generated income is payment of children’s school fees.

Ecosystem-based initiatives are often inclusive of women, and many are women-led. This contributes to the kind of economic independence and empowerment envisioned in MDG 3.

Taken together, the benefits of initiatives offer multiple and integrated routes to support the suite of MDGs, making them a convenient path to MDG acceleration.



The Need for Integrated Approaches

The problems of climate, resource scarcity, poverty, and health are linked through their relationship to ecosystems, and therefore demand an integrated solution.

The food, fuel, climate, and environmental health crises have to be tackled together, not as separate problems. They all affect or are affected by the functioning of ecosystems. Pursuing separate solutions to these crises ignores their interrelationships, and fails to take advantage of possible synergies. Separate solutions can lead to difficult trade-offs. For example, growing biofuels to address climate concerns may displace food crops and lead to higher agricultural commodity prices, exacerbating the food crisis. Using aquaculture to replace declining fish stocks may undermine coastal ecosystems on which marine fisheries depend. And curbing forest use to reduce climate emissions may disrupt forest-based livelihoods and increase rural poverty. Such outcomes are not inevitable, however. An integrated approach can help minimize trade-offs, and make it possible to combine investments in food security and climate mitigation without compromising environmental integrity or livelihoods. This means working across key sectors, and more effectively linking action at local, national, and global levels.

Properly managed ecosystems and infrastructure development can lead to multiple benefits in terms of poverty reduction, health improvement, and environmental gains.

Managing ecosystems to restore or retain healthy functioning increases their ability to support both economic activity and human health. For example, effective watershed restoration can raise water tables and recharge wells; the resulting increase in clean drinking water can reduce waterborne diseases, while more water for irrigation can increase agricultural production and raise farm incomes. Tackling problems in an integrated way and achieving synergies helps to maximize development gains. Similar opportunities exist in infrastructure development. For example, properly designed infrastructure not only addresses environment-related health risks through expanded coverage, but also helps to reduce mortality from malnutrition-related diseases and the consequences of malnutrition on educational attainment. Investments in sound ecosystem management and infrastructure development thus have a significant multiplier effect—enabling governments to get a bigger ‘bang for the buck’ and therefore stretch their budgets further.



ECOSYSTEM SERVICES: THE 'GREEN ECONOMY' OF THE POOR

Ecosystem services are often the prime assets in the household economies of the poor. When properly deployed, the productivity of these green assets can be raised substantially, leading to increased income and livelihood opportunities, for women as well as men.

Three decades of case studies and analysis have also demonstrated that community-driven ecosystem initiatives generate more than economic benefits. Indeed, the social and environmental benefits—from greater empowerment and social mobility to more stable and productive ecosystems—are just as significant. For example, greater climate resilience can result from sustainable farming, fishing, forestry and grazing practices that form the core of ecosystem initiatives, thereby reducing the poor's vulnerability to climate change.

'Growing the green economy of the poor' means increasing the quantity, sustainability, and distributional equity of these benefits through good ecosystem management—by individual farmers, fishers, and forest dwellers, but especially by community-based groups and other local organizations that pursue nature-based enterprises and other ecosystem-based initiatives.

IMPROVED GOVERNANCE – THE MISSING LINK

Improved environmental governance and stronger local institutions capable of responding to the new development challenges and opportunities facing the poor will be key to accelerating progress toward the MDGs.

Poor people need secure resource rights, access to markets, and other enabling conditions to succeed in nature-based enterprise. When such an enabling environment is provided, experience shows that nature-based enterprises of the poor can attain significant scale, magnifying their environmental and poverty reduction benefits.

Institutional and governance changes also are key to addressing environmental health threats. Some common elements for successful environmental health actions in developing countries have included obtaining high-level political commitment, involving and empowering communities, allocating responsibilities and resources at the local level, and finding a balance between private and public sector roles.



III. UNDP'S STRATEGIC ORIENTATION IN ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

The world faces a number of inter-connected crises—from poverty and inequality, to food insecurity and civil unrest, battered financial markets, soaring energy costs and the consequences of climate change. If environmental and energy resource management is treated not as a constraint but as an opportunity, it can become part of the solution.

UNDP's position is that poverty, energy, and environment are inextricably linked. Poverty reduction depends on the sustainable use of natural resources, and the sustainable use of natural and energy resources cannot be achieved without poverty reduction and accelerated progress toward the MDGs.

The total cost of environmental investments needed to reach poverty reduction targets has been estimated at US\$ 60–90 billion per year over the next 10–15 years. To meet the growing threat of climate change will require another US\$ 80 billion annually for the next 50 years. In addition, access to basic modern energy services for those who are currently unserved is estimated to be US\$ 40 billion over next 20 years. Given the massive scale of these needs, the resources of UNDP and indeed of development assistance in general, are significant but far from sufficient to 'do it all'.

Therefore, UNDP needs to use its limited resources to redirect other financial flows toward sustainable development technologies and practices and catalyze initiatives with the potential to create substantial progress on multiple MDGs simultaneously. As the UN's lead development agency, UNDP's mandate to promote sustainable development cannot be achieved without a clear focus on poverty reduction and accelerated progress toward the MDGs.

UNDP's work to promote and support development options that integrate environmental sustainability with human well-being is carried out at many levels. Our 135 Country Offices, in particular the Environmental Focal Points, lead the organization's work in the field. They are supported by practice leaders, technical advisors and other experts in regional service centres and thematic centres of excellence around the world. At headquarters, the Environment and Energy Group (EEG) of UNDP's Bureau for Development Policy as well as UNDP's Regional Bureaus provide support as well as a global perspective.

UNDP defines its objectives for work on environment and sustainable development in line with higher-level strategic priorities, as outlined in the UNDP Strategic Plan 2008–2013. This plan calls for even more focused effort in four different but interconnected areas:

- Mainstreaming environment and energy into development
- Catalyzing environmental finance
- Addressing climate change
- Strengthening local capacity and action for the environment and sustainable development

UNDP's strategic priorities and activities in each of these areas are outlined below, along with examples of how each area specifically relates to MDG acceleration.



A. Mainstreaming Environment and Energy in Development

There is overwhelming evidence that environmental degradation and lack of access to clean, affordable energy services is neither an inevitable price nor an efficient path for poverty reduction and economic development. Integrating environmental sustainability and ensuring resiliency to the impacts of climate change will strengthen development results. Even so, a solid case for investing in environment and energy as a means to improve human well-being and accelerate achievement of the MDGs is still needed in many countries and UNDP is prepared to assist.

Natural resources, or 'environmental wealth', accounts for 26 percent of the total wealth of low-income countries, versus 13 percent of the wealth in middle-income countries and only 2 percent of the wealth in OECD countries¹. Three billion people still rely on traditional biomass and coal to meet their household energy needs and 1.5 billion people live in the darkness in developing countries. The nature of the assets held by the poor and percentage of the population lacking access to affordable, modern energy services determine the strategies they can use to lift themselves out of poverty. The large share of natural resources in the wealth of developing countries and in the asset base of poor households and lack of access to affordable, modern energy services demonstrate the need to integrate the environment and energy services into efforts to reduce poverty, fight hunger, and improve human well-being. However, while this need is often a clear reality on the ground, it often goes unrecognized in development planning and decision-making. This is a key challenge of the MDGs, which include a target to '*integrate the principles of sustainable development into country policies and programmes; reverse the loss of environmental resources*'.

However, experience shows that environmental and energy strategies and action plans, developed in isolation from other sectoral policies and programming or broader development planning, are typically less effective in protecting the environment and the integrity of critical ecosystem functions. The key drivers of development are often the productive sectors of the economy, including agriculture, forestry, fisheries, energy, transport, and finance. Therefore, integrating environment-related issues, commitments, and targets into both sectoral policies and broader economic and development planning is critical to enhancing governments' ability to effectively consider the impact of development policies on environmental sustainability, the functioning of critical ecosystems, and the natural resources upon which the poor depend.

In order to preserve the full range of natural ecosystems required for human well-being, environmental and energy access objectives must be embedded in policies that influence human activities, including the key productive sectors of the economy, as well as national development planning frameworks and budgets, institutions, governance, and market-based mechanisms. This 'mainstreaming' of environment and energy is crucial for effective action to promote development that is sustainable and climate-resilient.

Mainstreaming environment, energy, and sustainable development in national development planning and implementation is central to the UNDP poverty reduction and MDG mission. **UNDP's Strategic Plan** (2008-2013), which identifies Environment and Sustainable Development as a focus area, specifically articulates a key result to 'strengthen national capacities to mainstream environment and energy concerns into national development plans and implementation systems'.

1. World Bank, 2006. *Where is the Wealth of Nations?: Measuring Capital for the 21st Century*. Washington, DC: World Bank.



WHAT IS MAINSTREAMING? SOME DEFINITIONS

Poverty-Environment Mainstreaming

'The iterative process of integrating poverty-environment linkages into policymaking, budgeting and implementation processes at national, sector and sub-national levels.'

—From UNDP-UNEP PEI (2009)

Environmental Integration and Mainstreaming

'...encompass the process(es) by which environmental considerations are brought to the attention of organisations and individuals involved in decision-making on the economic, social and physical development of a country (at national, sub-national and/or local levels), and the process(es) by which environment is considered in taking those decisions.'

—Adopted by GEF Country Support Programme from IIED (2008)

Environmental Mainstreaming

'The informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action.'

—From Dalal-Clayton and Bass (2009)

The distinguishing aspect of mainstreaming is that it modifies how development occurs; it facilitates integrated approaches to the policy and programmatic responses. Mainstreaming will help align policies, programmes and operations with the long-term requirements of sustainable development, help modernize development policy content and procedures, and promote a pro-active approach rather than responding to impacts as they unfold. The primary thrust is to ensure that decision-making processes and the provision of development assistance take account of the long-term sustainability of the environment and natural resources and energy needs of the poor upon which poverty reduction and development so clearly depend.

To this end UNDP helps countries understand the contribution of environment and energy to development and assists them in integrating environment and energy into national development policy and implementation. The joint UNDP/UNEP Poverty Environment Initiative (see box) is a key vehicle for this support. Under this programme, UNDP and UNEP are successfully integrating the environment into economic and national development planning and decision-making as well as helping develop capacities, methodologies, and tools to preserve and enhance the contributions of the environment to poverty reduction.



THE POVERTY-ENVIRONMENT INITIATIVE

Recognizing the inextricable link between poverty and environmental degradation, UNDP and UNEP have together joined forces on an innovative global programme to support country-led efforts to integrate environmental issues into national development plans, policies and processes. The Poverty Environment Initiative (PEI) works with government partners to influence policy and support the inclusion of poverty-environment issues in budget processes, sector programmes and national and sub-national planning. As of early 2010, PEI was supporting programmes in 22 countries around the world.

In Rwanda, for example, PEI worked with the Minister of the Environment over several years to raise awareness of the link between the environment and the economy among key sectors. As a result, environment-poverty linkages were successfully integrated into Rwanda's development planning process and attention is now focused on strengthening local, district and national capacity for environmental management.

In Uganda, PEI helped the Ugandan environment authority, NEMA, to integrate environmental sustainability into the national PRSP, which in turn motivated the mainstreaming team in NEMA to push for and include environment into Uganda's national budget processes by adding guidelines for environment into the Budget Circular.

Most recently, in Malawi, PEI supported the Ministry of Agriculture and Food Security to develop sustainability indicators for an Agriculture Sector Wide Approach, which will serve to improve agriculture sustainability, and contribute ultimately to food security. Moreover, as part of this support, PEI helped improving effective government coordination by bringing together stakeholders from various natural resource management sectors such as agriculture, forestry and land management with finance and planning ministries in the framework of a PEI technical committee.

B. Catalyzing Environmental Finance

The world's poorest communities, which largely depend on ecosystem services and goods for their survival, continue to be disproportionately affected by significant and interconnected environmental challenges. These environmental challenges are fundamentally development challenges, and a key response must include an integrated approach to environmental financing.

Official Development Assistance will never be sufficient to fully address these challenges, however it can be used strategically to assist developing country governments in overcoming barriers—policy, institutional, capacity—to create conditions that attract private sector investment. Public finance must therefore act as a catalyst to leverage greater amounts of private finance, and these multiple sources of finance (e.g., development assistance, the Global Environment Facility (GEF), public transfers, direct private investments, environmental commodity markets) must be combined and sequenced effectively.

For the past 15 years, UNDP and the governments in the region have worked restore the highly degraded Danube River basin and Black Sea ecosystems. Through UNDP GEF International Waters projects, US\$50 million in grants were used to implement the necessary policy, legal, and institutional reforms. In consequence over \$3.5 billion in pollution reduction investments were stimulated which led to the recovery of these degraded ecosystems. This represents a leveraging ratio of public finance resources of about 70 to 1.



Private finance for these kinds of investments is scaling up. In the climate change space alone, there are more than 50 international public funds, 60 carbon markets and 6,000 private equity funds already providing green finance.² These are showing some signs of success in scaling up investment. Depending on the outcome of ongoing global climate change negotiations and other regulatory action, the global carbon market alone could be worth \$3.1 trillion by 2020.³

Since 1991, UNDP has assisted developing countries in securing over US\$ 3 billion in GEF financing, combined with over US\$ 9 million in co-financing to remove capacity, institutional and policy barriers, and to create conditions that allow markets and private investment flows to address pressing environmental priorities. As noted above, UNDP has also demonstrated that the leverage ratios of this type of technical assistance are often high, catalyzing private sector activity across entire industrial sectors.

EXPERIENCE FROM SOUTH AFRICA: LARGE-SCALE COMMERCIALIZATION OF WIND ENERGY

In order to meet their population's energy needs, the government of South Africa began to explore the large-scale commercialization of renewable energy, in particular wind energy. While the government believed there was good potential for wind energy, there were a number of barriers to establishing this industry, including uncertainty from ongoing restructuring of the power market; lack of a policy framework for renewable energy; very low prices for existing coal-based electricity; and lack of awareness, information, and skills regarding wind energy among local developers and investors. With US\$ 2.3 million in GEF grant funding secured by UNDP and the Department of Energy, the South African Wind Energy Programme (SAWEP) was formed to address these barriers and fully explore the potential for wind energy in South Africa.

In the first phase of the project, market and pre-feasibility studies were undertaken to address key barriers. SAWEP then supported the successful implementation of a demonstration wind farm. Co-financing of US\$ 10 million was provided by Denmark (DANCED and DANIDA), the Central Energy Fund (CEF), and the Development Bank of Southern Africa (DBSA), including the private sector. The demonstration project used a premium pricing model, and UNDP established a GEF-funded US\$ 1.4 million Green Power Guarantee Fund, hosted by the DBSA, which was instrumental in attracting the City of Cape Town to enter into a 20-year agreement with the demonstration wind farm.

SAWEP is now focusing on the large-scale commercialization of wind energy and has been a key contributor to South Africa's national renewable energy feed-in tariffs framework announced in 2009, and the complementary National Integrated Resource Plan due for publication later in 2010. Today, South Africa has three operational wind farms generating 10 MW, and the South African Wind Energy Association estimates that a further 5 GW could be commissioned by 2015. In anticipation of this coming investment phase, SAWEP's current activities include detailed wind mapping, capacity credit studies in collaboration with the South African electricity utility Eskom and the German aid agency GTZ, and local training in operations and maintenance.

UNDP's MDG Carbon Facility (see box) is a one-stop shop for project assessment to mobilize private sector financing for developing countries through the global carbon markets. In 2008 this project screened a total of 160 projects in 31 countries, signed two long-term agreements, and developed preliminary agreements for another ten projects. These projects could ultimately result in capital flows of hundreds of millions of dollars to these countries.

2. 'Charting a New Low Carbon Route to Development, A Primer on Integrated Climate Change Planning for Regional Governments', Chapter 2, Yannick Glemarec et al., United Nations Development Programme, 2009

3. Point Carbon, May 2008.



THE MDG CARBON FACILITY

The MDG Carbon Facility is both highly innovative and can be significantly scaled up for MDG achievements. The Facility operates to harness the vast resources of the carbon market in order to bring long-term environment and human development benefits to a more diverse share of developing countries. Launched in June 2007, the Facility offers emission reduction projects and a comprehensive package of project development services. UNDP provides technical assistance, helping project proponents conceive projects that reduce greenhouse gas emissions, and ensuring that these projects meet the Kyoto Protocol's agreed standards. The Facility operates within the framework of the Clean Development Mechanism and Joint Implementation, the market-based mechanisms under the Kyoto Protocol that allow developed countries to meet their compliance targets by financing greenhouse gas emission reduction projects located in other countries. While MDG Carbon Facility project ideas all come from the climate change perspective, they have enormous MDG benefits, especially projects that provide access to clean energy.

The MDG Carbon Facility in turn is working with Montreal Protocol bodies to assess the potential for establishing a multi-million dollar Ozone Depleting Substances (ODS) Facility that could be used as a source of finance for the climate benefits that result from the elimination of hydrochlorofluorocarbons (HCFCs) and the destruction of large ODS banks. The potential greenhouse effect of ODS is estimated to be 30 to 36 gigatons (Gt) of CO₂ equivalent. HCFCs phase out and ODS banks in the developing world represent about 20 Gt of CO₂ equivalent, which is four times the objectives of the Kyoto Protocol in its 2008–2012 compliance period.

Another example of UNDP's work on environmental finance is its new initiative in partnership with UNEP on Lower Emission Climate Resilient Development Strategies (see box). This initiative will sensitize and train up to 500 sub-national authorities on climate change risks and opportunities and help them prepare up to 50 integrated territorial climate plans that identify no-regrets adaptation measures and low-cost mitigation measures.

LOW-EMISSION CLIMATE RESILIENT DEVELOPMENT STRATEGIES (LECRDS)

UNDP's LECRDS, supported by the Territorial Approach to Climate Change (TACC) Facility, is a response to the increasing demand from sub-national authorities for assistance in assessing and managing the physical and socio-economic impacts of climate change. One of the main objectives of this initiative is to enhance the capacity of sub-national and local government to take advantage of new sources of environmental finance in order to implement their climate change responses.

Adaptation to climate change is highly site-specific; local planning decisions will be critical to tailoring adaptation action to local conditions. Indeed, local behaviour and investment choices influence an estimated 50–80 percent of greenhouse gas emissions.

The TACC Facility helps sub-national and local governments prepare integrated climate change action plans to identify priority mitigation and adaptation measures (negative costs/no-regrets/urgent initiatives). It then provides guidance to public authorities on how to choose and design the most appropriate policies and financing schemes (carbon finance, ODA, public-private partnerships, corporate social responsibility, index insurance, green bonds, etc.) to implement these priority measures, in a manner responsive to their unique territorial conditions.



UNDP is actively advocating the integration of gender awareness and gender equity in climate finance mechanisms. This includes an equitable voice in, equitable access to, and equitable benefits from climate finance for women and men. For instance, UNDP is calling on the mechanisms to incorporate poor women and men in decision-making processes and gather gender-disaggregated data on programme outcomes. Supporting women's access to climate funds and their associated technologies and knowledge will generate across all the MDGs, especially through increased income and empowerment of women.

GREEN COMMODITIES

The UNDP Green Commodities Facility (GCF) is working to scale up UNDP's existing initiatives with companies, governments, and others intended to help shift markets to drive the production and sale of green commodities. Green commodities are those produced and supplied in a manner which minimizes negative environmental impacts, and includes bulk-traded products as well as more specialized niche varieties. For example, in West Africa UNDP is working with Cadbury, which has invested US\$ 70 million over 10 years to shift cocoa production across West Africa towards more environmentally sustainable and socially beneficial methods. While currently focused on cocoa, coffee, cotton, and tuna, the range of commodities addressed is being expanded to include other agricultural, forestry and fisheries products, including rice, soy, palm oil, lobster, shrimp, beef, and timber.

C. Addressing Climate Change

With only 5 years left before the 2015 deadline to achieve the MDGs, the world is at a defining moment in its fight against poverty. Climate change threatens to undo decades of progress toward poverty reduction and poses grave risks to attaining the MDGs. To chart a new path toward sustainable development, countries must integrate climate change into their development planning and transition toward a new paradigm that attracts investment and drives it toward pro-poor, low-emission, climate-resilient development.

CLIMATE CHANGE: THE COSTS OF INACTION

Addressing climate change will require significant efforts. But the benefits of strong, early action considerably outweigh the costs. Notably, the Stern Review emphasizes that the failure to invest in activities addressing climate change could cost the global economy up to 20 percent of global GDP—equivalent to the great wars and depressions of the 20th Century.

Critically, the effects of climate change can translate into downward spirals of development. In agriculture, increased droughts and hurricanes can lead to decreased food security. Families focusing on subsistence may be forced to remove children from school to help support the collection and production of food. This can lead to reduced opportunities in the future. For example, Indian women born during a drought or a flood in the 1970s were 19 percent less likely to ever attend primary school.⁴ In places like Sub-Saharan Africa, climate change places additional demands on fragile economies and drains limited human and financial resources. It is critical that any solution to the MDGs must support climate action and vice versa.

4. UNDP 2007/8 Human Development Report on Climate Change.



As the United Nations' global development network, UNDP's goal is to align human development and climate change management efforts by promoting mitigation and adaptation activities that accelerate socio-economic progress and the attainment of the MDGs. Successful climate change management will require a dramatic scaling up of mitigation and adaptation efforts at all levels, enabled by a coordinated mix of policy and financial instruments. It will call for a new development paradigm that mainstreams climate change into strategies and plans, and that links policy setting with the financing of solutions. Effective climate solutions also must take into account cross-cutting issues, such as gender-specific needs, knowledge, and benefits associated with addressing climate change.

MAKING INVESTMENT DECISIONS UNDER CONDITIONS OF UNPRECEDENTED UNCERTAINTY

Climate change represents a dramatic increase in uncertainty and new decision-making methods will be required to cope with it. Designing infrastructure and other policy responses adapted to a full range of possible future climates will be considerably more difficult and complex. While we know that our climate will change over the long term, decision-makers can expect to be confronted with situations in which the direction of change is not fully clear at this stage. Yet they will still need to make investment decisions today, with incomplete information. The risk of making poor investment decisions in reaction to short- to medium-term changes could exceed the direct costs of climate change.

Strategies to cope with this climatic uncertainty that yield benefits regardless of how the local climate changes, do exist. Examples such as risk management practices and prospective scenario-based approaches can overcome some of the constraints posed by the lack of data and help regional and local planners and development practitioners identify and implement development strategies that can address different possible future climate conditions.

Preparing integrated territorial climate plans can identify and prioritize adaptation and mitigation initiatives and highlight the socio-economic benefits of addressing climate change in the short to medium term. These plans should identify 'no-regrets' adaptation options, such as disaster risk management and improving emergency response systems, as well as negative-cost or no-cost mitigation options, such as energy-efficient appliances or buildings.

International finance—both public and private—will be needed to support developing countries in making these changes. For the least developed countries, this finance will be needed to grow more sustainable economies and leapfrog destructive carbon-intensive development. In more advanced developing countries, this international finance will be needed to stabilize and reduce emissions. Critically from a development policy perspective, the scale of climate financing—\$30 billion between 2010 and 2012 and up to \$100 billion per year by 2020—could represent almost a doubling of current Official Development Assistance. This scale of funding represents the largest increase in international finance for developing countries for decades and is a major opportunity to address poverty.

UNDP provides country-driven, multi-stakeholder services to assist developing countries to scale up efforts to address climate change in a way that strengthens and advances national development priorities. For example, UNDP hosts a US\$ 92 million Africa Adaptation Programme funded by the Government of Japan. This programme is working in 20 countries to help develop the methodologies, approaches, and mechanisms to face the threat of climate change. UNDP also recently launched, together with UNEP and FAO, a collaborative programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD Programme), with US \$102 million support from the Government of Norway, Denmark and Spain. UNDP coordinates national programmes in 9



countries where it facilitates consultations with local and indigenous communities to ensure that appropriate rights, payment schemes, and benefit-sharing mechanisms are in place.

Importantly, UNDP works to ensure that gains can be felt across the MDGs. Where synergies can be realized between mitigation, adaptation, and development, climate activities bring about multiple benefits and gain political traction to remove policy barriers. An example is sustainable agriculture development, which can boost economic development and food security, reduce greenhouse gas emissions, increase soil carbon sequestration, protect biodiversity, and enhance water conservation.

Likewise, supporting women's empowerment in the context of climate change initiatives has large multiplier effects across multiple MDGs. For example, the adoption of cleaner and more reliable forms of fuel in Burkina Faso, Ghana, Mali, and Senegal has created income-generating opportunities, mainly for women. Evidence suggests that women have tripled revenues from self-employment. Furthermore, in villages with electricity, literacy rates can be as high as 94 percent, compared with 62 percent in those without.

CLIMATE CHANGE ADAPTATION IN SUPPORT OF MDG 1

Promoting climate-resilient development entails reducing vulnerabilities to the adverse impacts of climate change while increasing adaptive capacities to prepare for and manage climate change uncertainties and impacts. To safeguard efforts and achievements towards MDG 1, integrating climate change risk management principles into national development strategies, policies, and plans is crucial.

With financing from the Global Environment Facility (GEF), UNDP supports the design of adaptation policies and strategies, promotes early adaptation actions and long-term adaptive capacity, and advances the use of low-carbon technologies and land use practices. UNDP-GEF adaptation initiatives are designed to complement and integrate with national priorities and strategic development frameworks such as the Poverty Reduction Strategies.

- In **Tanzania**, UNDP is supporting the mainstreaming of climate change concerns into the integrated water resources management (IWRM) framework of the Pangani river basin, an important area for hydropower production, irrigated agriculture, livestock, and fisheries. The initiative is promoting increased understanding of the environmental, economic, and social implications of different river-flow scenarios under a changing climate to enable planning and policy for equitable allocation of freshwater for the livelihoods of current and future generations.
- In **Bangladesh**, support is being provided to enable the Ministry of Agriculture to revise national policies to increase the climate-risk resilience of coastal communities. Building on lessons drawn from piloted community-based adaptation measures, national policies including the National Environment Policy, National Forest Policy, National Land Use Policy, and the Coastal Zone Policy are being revised to promote the resilience of livelihoods among coastal communities to impacts of climate change.
- In **Cambodia**, the Ministry of Agriculture, Forestry, and Fisheries is receiving support to build capacity within local institutions in climate-resilient water management. This includes provision of training for provincial and commune-level officials in climate-risk management and development of climate-sensitive plans as well as training of engineers in climate-resilient irrigation design.
- In **Niger**, the National Council for Sustainable Development is aiming to increase the resilience of agricultural production systems and food-insecure communities. Adaptation measures being demonstrated include dissemination of drought-resilient crop varieties, construction of cereal and fodder banks, stabilization of dunes and river banks, and establishment of small-scale savings and credit institutions to support the development of entrepreneurial activities.



D. Strengthening Local Capacity and Action for the Environment and Sustainable Development

Local action—action that reflects the demands, perspectives, and commitment of local actors—is critical to sustainably managing the environment and energy to reduce poverty and achieve the Millennium Development Goals (MDGs). Local actors are the chief users and guardians of the world’s ecosystems, managing or administering at least 22 percent of developing country forests and employing diverse landscape management approaches in over half the world’s 102,000 protected areas. The vast majority of environmental decisions (including decisions on investment and land use) are made at the local level. Over generations, local actors have used their traditional ecological knowledge to manage natural resources, conserve and maintain ecosystems, and adapt to environmental changes.

LOCAL ACTORS AND ENABLING CONDITIONS FOR SCALING UP

Local organizations at the ‘end of the MDG delivery chain’ can be highly effective and equitable in helping poor and vulnerable groups to improve poverty and environment outcomes, and should be a strategic focus of efforts toward MDG acceleration.

Such organizations span a wide range of formal and informal groups, from resource user groups and self-help groups to small NGOs, commercial cooperatives, and local government bodies. They can be particularly effective development partners because they are embedded in the community social order and understand local livelihood strategies centered on ecosystems and the services they provide. In this sense, they provide an important entry point for building a vital green economy at the village level that can deliver substantial development benefits.

Community-based initiatives need a variety of enabling conditions—such as resource tenure, market access, a friendly regulatory environment, and gender-equitable roles, contributions, and benefits—in order to make the most of their ecosystem resources to produce incomes, jobs, and increased well-being for their participants. Understanding these conditions and removing policy and institutional barriers that impede them is essential if local ecosystem initiatives are to scale up.

Many different capacities—technical, business, social, and institutional—are necessary to manage ecosystems for sustained benefits and distribute these benefits equitably. Providing for the consistent development of these capacities is one of the most effective ways of helping to establish and sustain ecosystem-based initiatives that contribute to meeting the MDGs.

Too often, however, local actors, especially women, are excluded from meaningful participation in environment and energy policy-making processes. Exclusion has served to weaken the impact, cost-effectiveness, and sustainability of initiatives, funding mechanisms, and programmes implemented by international development agencies and national governments.

In spite of these obstacles, communities have successfully undertaken thousands of sustainable and effective community-driven projects, from constructing local water and energy systems, to managing local fisheries, to establishing ecotourism enterprises.

Small-scale projects can have positive impacts on various MDGs. In Fiji, the Marine Protected Areas networks have increased local income by employing women as reef gleaners, who benefit from selling shellfish. These women have seen a 35 percent increase in their income in just over 3 years. In Niger, vulnerability to drought



was reduced through large-scale forest regeneration programmes and the transfer of ownership titles from the State to communities. In Pakistan, 2.5 million hectares, or 30 percent of the Thal Desert, were converted into cultivable land and used for planting trees.

Even so, the transformative potential of local actors to manage the environment and achieve development goals has not been adequately recognized or harnessed. This stems from a systematic failure to deliver the rights, access, and finance that local actors need to fully tap their natural resource assets and frame their own development solutions.

While we know many of the success factors and enabling conditions behind productive local ecosystem initiatives, they have not yet been applied systematically to scale up such initiatives and accelerate progress toward the MDGs. UNDP is addressing this situation by leveraging the knowledge, skills, and capacities of local communities to better manage the environment and deliver services, especially to the poor. Priorities in this area are to:

1. *Promote Rights, Access, and Finance Mechanisms.* Strengthen institutional, policy, and legal frameworks to broaden local access to environment and energy resources and services, and to enable finances to flow to the local level.
2. *Enhance Environmental Management and Finance Capacity.* Enhance the capacity of local actors, especially women, to access environmental finance and plan, implement, and monitor environment and energy programmes, enterprises, and service delivery.
3. *Facilitate Learning and Knowledge Sharing.* Promote peer-to-peer learning, knowledge sharing, and documentation of best practices to make local action more effective, sustainable, and replicable.
4. *Strengthen Community Voices in Policy Processes.* Ensure that local actors are positioned to advocate for their rights and entitlements related to environment and energy in national and international fora.

LOCAL CAPACITY AND ACTION: LINKS TO UNDP'S OTHER STRATEGIC PRIORITIES FOR WORK ON ENVIRONMENT, ENERGY, AND SUSTAINABLE DEVELOPMENT

Mainstreaming: Local-level involvement in policy and programme formulation, implementation, and monitoring is critical to the success of national policies. Best practice at the local level can make national policies more effective and efficient and provide valuable opportunities for scaling up. To be effective, national policies need to be relevant on the ground.

Environmental Finance: For markets to provide solutions to sustainable development challenges, local actors on the front lines need to be able to access environmental finance and must have the capacity to receive and manage environmental finance. Improved linkages between national governments and local actors will facilitate the flow of international financial resources to the local level—to those who need them most and who are most capable of delivering concrete action and impacts. CBA, REDD, the Territorial Approach, and the MDG Carbon Facility mechanisms will be more effective through engaging and benefiting local actors.

Climate Change: Communities have been adapting to their changing environments for generations. There is a wealth of knowledge at the local level on adaptation techniques. Support to local actors to scale up successful community-based adaptation approaches will strengthen national adaptation strategies. Similarly, a successful REDD mechanism requires that local actors are involved in programme formulation, implementation, and monitoring. On behalf of the UN-REDD Programme, UNDP is advancing the engagement of Indigenous Peoples and other forest-dependent communities.



The GEF Small Grants Programme will play a crucial role in delivering the Local Capacity Strategy. The programme has funded more than 13,700 small-scale, local-level environment projects in developing countries over the past 18 years (see box).

GEF SMALL GRANTS PROGRAMME

For almost two decades, the Small Grants Programme (SGP), implemented by UNDP on behalf of the GEF partnership, has been working with communities around the world to combat the most critical environmental problems and support communities in their efforts to achieve more sustainable livelihoods. With operations in 122 countries and more than 13,700 small grants averaging \$23,000 awarded worldwide, SGP supports projects of non-governmental and community-based organizations in developing countries to demonstrate that community action can meet both human needs and environmental sustainability.

SGP channels financial and technical support directly to NGOs, CBOs, and indigenous peoples for activities that conserve and restore the environment while enhancing people's well-being and livelihoods. Its principal objectives are to:

- Develop community-level demonstration projects and implement technologies that could reduce threats to the global environment, particularly when they are replicated over time and scaled up with other partners.
- Gather lessons from community-level experience and initiate the sharing of successful community-level strategies and innovations among CBOs and NGOs, host governments, development aid agencies, GEF and others working on a regional or global scale.
- Build partnerships and networks of stakeholders to support and strengthen community, NGO, and national capacities to address global environmental problems, contribute to poverty reduction and community empowerment, and promote sustainable development.
- Develop flexible formats and 'community-friendly' approaches to increase support to marginalised populations and demonstrate how civil society efforts can simultaneously protect the global environment and contribute to achievement of the MDGs at the local level.

SGP provides an effective modality to deliver funding and a range of services directly to the local level, through a tried and tested decentralized institutional governance architecture operating across more than 100 UNDP Country Offices. On the basis of 18 years of experience in grant-making, the programme guarantees donors and co-financing partners the highest levels of international fiduciary accountability.

The SGP has gradually expanded its portfolio from 35 countries in its pilot phase in 1992 to 122 countries by June 2010. In addition, SGP has mobilised over \$300 million in additional funding for community-based activities. In consultation with a range of partners, UNDP is currently exploring ways to support community-based adaptation to climate change through the SGP delivery mechanism.



COMMUNITY-BASED ADAPTATION TO CLIMATE CHANGE

Climate change is global, but its impacts are regional and local. Local communities depend upon climate-sensitive resources for their livelihoods. Hands-on adaptation measures are needed at community levels to strengthen resilience and to increase people's ability to manage the risks and negative impacts of climate change. A community with a diversity of options to respond to climate change risks has higher adaptive capacity and reduced vulnerability.

While communities have responded successfully over time to the challenges presented by climate variability and change, the magnitude, intensity and frequency of changes have reduced their capacity to cope or respond effectively. Vulnerable local communities have an urgent need to raise their capacity to effectively adapt to climate change. A vital approach is community-based adaptation, which can be viewed as an additional layer to community-driven priorities.

With financing from the Global Environment Facility (GEF), UNDP supports developing countries' efforts to increase capacity for community-based adaptation to address long-term climate change impacts. UNDP encourages systemic change in national adaptation-related policy through evidence-based, gender-differentiated results from a portfolio of community-driven climate change risk management projects. UNDP promotes global learning related to community adaptation by sharing lessons from a range of initiatives focusing on natural resource management.



IV. UNDP'S THEMATIC AREAS IN ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

The following section highlights a few selected thematic areas where UNDP's work on environment and sustainable development is focused, and how these areas are linked to accelerating and sustaining progress toward the MDGs. These thematic areas constitute the arenas in which much of UNDP's environment and sustainable work is done, and services and results are delivered at the country and/or regional level. The five thematic areas discussed below are energy access, safe water and sanitation, biodiversity, sound management of land, and sound management of chemicals.

In each of the sections below, we look at WHY progress in this area supports the attainment of multiple MDGs, WHAT experiences and lessons learnt tells us about what needs to happen in order to accelerate progress toward the MDGs and sustain the gains that have already been achieved, and HOW UNDP supports progress in this thematic area.

A. Energy Access and the MDGs

WHY energy access contributes to progress on all the MDGs

Energy is central to poverty reduction and all aspects of sustainable development. Worldwide approximately 3 billion people—almost half of humanity—still rely on traditional solid fuels, such as wood, dung, crop residues, and coal, to provide energy for cooking and heating. Some 1.5 billion have no access to electricity, and 1 billion more have access only to unreliable electricity networks. Unless massive efforts are made to expand the range and quantity of clean, reliable and affordable energy services available to poor men and women, countries are unlikely to achieve their development aspirations.

Expanding access to modern energy services helps to meet multiple MDGs.

Increased energy access helps to increase incomes and reduce hunger for poor people and poor communities (MDG 1). Productive uses of energy can spark rural economies and significantly increase income-generating activities, livelihoods, and micro-enterprise. Electricity and mechanical power for irrigation and agro-processing can dramatically improve agricultural productivity.

Energy access also supports educational attainment (MDG 2). Electricity can power schools and provide lighting services that extend daylight hours for study. In Nepal, communities with access to electricity (see box) spend more on education, have higher educational attainment, and are better able to retain trained teaching staff. Access to modern fuels can reduce time spent gathering fuelwood, enabling children, especially girls, to spend more time in school.

Energy access contributes to gender equality (MDG 3) by creating substantial time savings for women and girls. In Burkina Faso, diesel-based village systems for agro-processing (see box) saved women and girls an average of 2-4 hours per day—enabling women to earn more income and girls to be able to attend school.

Energy access contributes to improved health for poor people and communities (MDGs 4, 5, and 6). Electricity can power health clinics and enable refrigeration of vaccines and other life-saving drugs. Moreover, access to modern fuels can help prevent an estimated 2 million deaths annually from child pneumonia and adult chronic lung disease that are directly attributable to indoor burning of solid fuels.



Access to modern energy also helps promote environmental sustainability (MDG 7). Increased use of modern fuels can help reduce forest degradation and soil erosion associated with traditional fuel use. Accelerated deployment of renewable energy and energy-efficient systems can lower air pollution and decrease emissions contributing to global climate change.

WHAT experiences and lessons learnt in this area tell us about what needs to happen for MDG acceleration

The UN Secretary-General's Advisory Group on Energy and Climate Change has called on the UN system and its Member States to commit to ensuring universal access to modern energy services by 2030. While this goal is ambitious, it is achievable. There are precedents for large shifts in energy access—including in China, Viet Nam, and Brazil—that demonstrate the feasibility of reaching this goal.

Specific interventions to expand energy access and accelerate attainment of the MDGs include:

Integrate energy access in national development strategies and formulate policies. To improve energy access for poor people and communities, countries need to integrate energy access in national development strategies and formulate policies to create conducive legal and regulatory environments for both centralised and decentralised off-grid systems. National strategies should create a predictable long-term policy environment for investment. In Burkina Faso, integrating access to modern energy with the broader poverty reduction framework enabled the government to provide co-financing for the Multifunctional Platform Programme (see box) while also leveraging additional resources from development partners.

Mobilize innovative investments and financing strategies for expanding energy access. A significant rise in national and international finance (including bilateral and multilateral) will be needed to catalyze existing funding mechanisms and to leverage increased private-sector investment. Expanded resources are critical not only to meet capital requirements, but also to strengthen national capacities for delivering rural energy access. The International Energy Agency (IEA) estimates that the cost of achieving universal access to modern energy services to meet basic needs (i.e., lighting, communication, cooking and heating, health care, and education) will average US\$ 35 billion per year until the 2030 goal.

Develop effective approaches for scaling up energy service delivery. Setting up and enhancing institutions is crucial for expanding access to modern energy services. In Nepal, the establishment of a dedicated agency to lead and coordinate rural energy programmes as well as the subsequent creation of rural energy centres, district energy committees, and community organizations made scaling up of decentralized, off-grid energy systems a reality.

Capacity development for universal modern energy access. Integrating energy to development strategies and policies, mobilizing finance, and promoting effective delivery mechanisms require the development of capacity at all levels. Overcoming gaps in local and national capacity is a prerequisite for delivering rural energy access, especially in poor communities, where geographical remoteness and small, fragmented markets may rule out the use of traditional delivery systems, such as central utilities. In such circumstances, capacity development needs go far beyond traditional notions of 'training' and require the development of a diverse array of functional and technical capacities (see box on REDP in Nepal). This entails substantial upfront public investment, but once made, these investments can help drive down per-unit costs of delivering energy services.



Enhanced cooperation and partnerships. Providing universal access to modern energy will require coordination and collaboration with all development partners. National governments, local authorities, private entities, civil society organizations, and communities all have important roles to play. South-South cooperation is vital, as middle-income countries can contribute by sharing relevant expertise, experience, and replicable good practices with less developed countries.

Integration of poverty reduction, energy access, and climate change strategies. Greater coordination of poverty reduction, energy access, and climate change processes, is a prerequisite for reaching the MDGs. Access to modern clean energy is critical to a low-carbon development future and increases the resilience of people and poverty reduction programmes to climate change impacts.

HOW UNDP supports countries in this thematic area and how it contributes to MDG progress

Integrated development approach. Through an integrated development approach, UNDP helps governments establish enabling policy frameworks and build capacity for expanding access to energy services for the poor. UNDP supports the capacity of developing-country governments to: integrate access to energy services within national development strategies and policy formulation; mobilize innovative investments and financing strategies for expanding energy access; and develop effective approaches for scaling up energy service delivery.

Advisory and technical services. UNDP provides knowledge-based advisory and technical services and supports multi-stakeholder processes that bring together ministries, planning agencies, businesses, and consumer groups to consider sustainable solutions to national energy challenges. UNDP helps local men and women select their own development priorities, and contribute to international conventions, regional agreements and national plans. Successful local energy projects are documented and can then be scaled up and replicated elsewhere.

Regional cooperation. At the regional level, UNDP's five Regional Cooperation Frameworks help countries and institutions share their knowledge and 'best practice' experiences. Globally, UNDP undertakes analyses of energy access trends, and acts as an advocate regarding linkages between energy and sustainable development goals.

Partnerships and coordination. Scaling up access to modern energy services requires coordination among global, regional, and national development partners and donors. National leadership and South-South collaboration set the stage for UNDP support, which taps into processes such as the United Nations Development Assistance Framework, the United Nations Country Team, and UNDP knowledge networks such as the Environment and Energy Network and Teamworks. The UNDP global, regional, and country energy teams work with development partners to implement energy access actions on the ground.

Active portfolio. More than 1,500 off-grid decentralised energy initiatives in over 100 developing countries have made UNDP a leader in energy access. Some 7 million people—one million each year—benefited directly in the period 2001–2007 from a portfolio worth over \$350 million in UNDP support for expanding access to modern energy services. UNDP funds energy activities through its regular resources, as well as in its role as an implementing agency of the Global Environment Facility (GEF). As of July 2009, 44 countries were working with UNDP on 59 energy efficiency, renewable energy, and green transportation projects financed by the GEF in the amount of US\$ 225 million, with an additional US\$ 931 million in co-financing. This support has expanded considerably in 2010. The portfolio also includes an innovative MDG Carbon Facility designed to capture resources from the carbon markets for low-emission energy access technologies.



EXPERIENCE FROM BURKINA FASO: EXPANDING ACCESS TO MECHANICAL ENERGY SUPPORTS IMPROVED LIVELIHOODS AND MEETING MULTIPLE MDGS

In Burkina Faso, the Multifunctional Platform Programme is expanding energy access, enhancing livelihoods, and contributing to progress on multiple MDGs in more than 400 villages, benefiting more than 600,000 people.

A Multifunctional Platform (MFP) is a simple, stand-alone energy system that is well suited to rural areas without access to electrical or mechanical power. In an MFP, a diesel engine (generally 10 horsepower or 7.5 kW) is mounted on a steel chassis and used to power a variety of equipment. Community members can be trained in its operation and maintenance. Typically, MFPs provide mechanical power for household food processing, but the newest generation of MFPs also can provide additional energy services, such as electricity for lighting and refrigeration, water pumping, and battery charging. MFPs have been successfully implemented in parts of West Africa to establish agro-processing enterprises in remote villages.

The experience in Burkina Faso has shown that MFPs free up 2–4 hours per day of women's time and labour for other pursuits, such as education, health care, and income-generating activities, and enables girls to attend school [MDG 3]. Women entrepreneurs who become MFP operators provide grinding, milling, and husking services to community members for a fee, enabling the women to earn extra income.

Burkina Faso's experience also indicates strong demand for small-scale finance to support income-generating activities made possible by the MFPs. Based on experience gained so far, the government intends to progressively roll out the MFP programme to additional regions of the country, with a target of establishing 1,400 additional MFPs between 2010 and 2015. With this replication and scale-up, the programme would reach some 2 million people, almost one quarter of the national population.

EXPERIENCE FROM NEPAL: SCALING UP DECENTRALISED, OFF-GRID ENERGY SYSTEMS

In Nepal, off-grid, community-managed micro-hydropower systems are bringing electricity to 267 poor, remote hill communities, benefiting some 250,000 people. Communities have experienced multiple MDG benefits, including increased household income, greater agricultural productivity, higher educational attainment, enhanced gender equality, better health outcomes, and better environmental quality.

The systems were installed by Nepal's Rural Energy Development Programme (REDP), which uses community-managed micro-hydropower as the entry point for holistic development and poverty reduction. Launched in 1996 as a pilot in five districts, REDP has since scaled up to cover some 40 of Nepal's 75 districts. With a combined capacity of more than 4,400 kW (as of December 2009), REDP systems account for about 40 percent of all installed small-scale hydropower (i.e., systems of 5–100 kW) in Nepal. The programme plans to be present in all 75 of Nepal's districts by 2012, and anticipates a further 6,000 kW of installed capacity, supplying electricity and mechanical power to some 1 million people.



REDP is notable for its emphasis on community participation and empowerment, including the equitable involvement of women in management and decision-making. With very few exceptions, all households in the community are connected to and benefit from the micro-hydropower systems, not just better-off households.

One of the hallmarks of the REDP is its sustained and coordinated effort to develop national and local capacity to successfully deliver and scale up decentralised, off-grid energy systems. This upfront investment in capacity development created the conditions for successful programme implementation and scale-up. With sustained public investment as the programme expanded, unit costs of MHS fell substantially—from more than US\$ 16,000 per installed kW in 1996–1998 to about US\$ 4,500 per kW by 2005–2006.

B. Access to Safe Water, Sanitation and the MDGs

WHY safe water and sanitation contribute to progress on all the MDGs

The provision of safe water and sanitation for all is one of the most powerful drivers of human development. According to analyses conducted by the UNDP Water Governance Programme, access to water supply and/or sanitation explains 78 percent of variation in the Human Development Index, more than any other variable examined (including spending on health and spending on education).

Yet, more than 1 billion of the world's people lack access to clean water. Coverage rates are lowest in sub-Saharan Africa, but in absolute terms, the largest number of people without clean water live in Asia. Some 2.6 billion people—half the population of the developing world—lack access to adequate sanitation; in sub-Saharan Africa, only 1 person in 3 has access.

Expanding access to clean water and sanitation helps to meet multiple MDGs.

Increased access to clean water and sanitation helps to increase incomes and reduce hunger for poor people and poor communities (MDG 1). Water is a productive resource and key input to livelihoods. In Sub-Saharan Africa, economic losses due to lack of access to water and sanitation are estimated at 5 percent of GDP. Every \$1 spent in this sector generates an average of \$8 in productivity gains and costs averted.

Safe water and sanitation also support educational attainment (MDG 2). Schools with access to clean water and sanitation enable children to stay healthy and miss fewer days of school due to waterborne diseases. The burden of collecting water and carrying it over long distances keeps millions of girls out of school.

Access to clean water and sanitation contribute to gender equality (MDG 3) by creating substantial time savings for women and girls. Women and girls spend up to 4 hours per day collecting and carrying water. With improved access, women have more time for income-generating activities and girls are more able to attend school.

Access to safe water and sanitation contributes to improved health for poor people and communities (MDGs 4, 5, and 6). Unclean water is the world's second largest killer of children. Some 1.8 million children die annually due to diseases related to unclean water and poor sanitation. In Cameroon and Uganda, access to safe water reduced the child death rate by 20 percent.



Improved water management also helps promote environmental sustainability (MDG 7). Unsustainable water use creates large ecological stresses with serious implications that will persist for generations. Over 1.4 billion people currently live in river basins where the use of water exceeds minimum recharge levels, leading to groundwater depletion.

WHAT experiences and lessons learnt in this area tell us about what needs to happen for MDG acceleration

Many countries have made extraordinary progress in providing clean water and sanitation. Though the challenges are great, people and countries across the developing world are providing leadership, mobilizing resources, and bringing innovative solutions to the provision of water and sanitation to poor communities.

Specific interventions to expand access to water and sanitation and accelerate attainment of the MDGs include:

Create enabling conditions. All governments should prepare national plans for accelerating progress in water and sanitation, with ambitious but achievable targets backed by financing and clear strategies for overcoming inequality. These plans should address needed policy reforms and removal of wasteful subsidies and perverse incentives that encourage overuse of water. Countries should make water and sanitation a priority in their PRSPs, with clear goals and targets linked to medium-term financing provisions. Also key are appropriate pricing policies that recognize the real value of water and the establishment of regulatory frameworks that allow citizens to hold water providers accountable.

Increase investment by the public and private sectors. Expanding access to water and sanitation requires large upfront investments in infrastructure as well as ongoing costs of operation and maintenance. Yet, water and sanitation are chronically underfinanced, with governments currently allocating an average of 0.5 percent of GDP for this crucial sector. Governments should set a target of spending 1 percent of GDP on water and sanitation. For many of the poorest countries, international assistance will be critical, due to constrained public budgets as well as the limited potential for cost recovery from poor communities and households. Donors should target their support for nationally led strategies, with meaningful national ownership. In many cases, critical infrastructure needs will extend to water storage and flood control.

Decentralised, community-led approaches. Local problems often require local solutions. Community-led initiatives, with women having an equitable voice in shaping priorities, are critical to expanding access to clean water and sanitation. Communities have tremendous power to mobilize resources, including the labour of their members. Governments in their turn can build on community-led initiatives through interventions aimed at scaling up best practices.

Integrated management. Integrated water resources management (IWRM) can provide a coherent planning framework for managing a range of water resources with diverse sources of demand. It can be an invaluable tool for addressing water availability and growing scarcity. Countries should develop IWRM strategies that set national water use levels within the limits of ecological sustainability

Accelerate strategies for adaptation to climate change. Climate change will transform hydrological patterns that determine the availability of water and the livelihoods of millions of the world's poorest people will become more precarious. National water management policies and international aid to the water sector should place greater emphasis on strategies for adaptation to climate change, especially with respect to rainfed agriculture.



Develop capacity at the national level. Empowering communities and local governments to manage their own water resources requires increasing their capacity to do so. This will involve both technical and managerial capacity, including the setting up of user groups and other local institutions in which poor people, especially women, have a say in setting priorities for investment as well as day-to-day management and operation of infrastructure for delivering clean water and sanitation.

HOW UNDP supports countries in this thematic area and how it contributes to MDG progress

Mainstreaming water supply and sanitation into national governance and policy frameworks. UNDP provides support to developing countries for the necessary improvements in water governance and policy reform to scale up water and sanitation services for the poor. This includes support for the inclusion of water and sanitation in national development planning.

Coordinated country assistance. UNDP's Water Governance Programme focuses on coordinated country assistance by UN and other development partners. Special attention is given to fragile states where water and sanitation challenges are greatest. Through governance-focussed interventions, UNDP's MDG GoAL-WaSH (Governance, Advocacy, and Leadership for Water, Sanitation, and Hygiene) initiative supports its partners to increase national efforts to achieve MDG 7. To this end, GoAL-WaSH undertakes rapid sector assessments to identify bottlenecks and strategic interventions. As of early 2010, detailed sector assessments had been completed in 11 countries and project documents developed for 10. Implementation is expected to begin in late 2010 for at least eight countries.

Local-level initiatives. At the local level, UNDP supports decentralised policy implementation and community action through programmes such as the Community Water Initiative and Every Drop Matters (see boxes).

Capacity development. Cap-Net is UNDP's global network to strengthen capacity building at the local level towards sustainable management and development of water resources and improved access to water supply and sanitation. The network consists of a partnership of international, regional, and national institutions committed to capacity development in the water sector. Cap-Net acts through local knowledge centres and experts, strengthening the local knowledge base and supporting sustained delivery of capacity development services through local institutions. In Africa, for example, the linkage for water utilities between water resource management and capacity building is being strengthened in partnership with UN-HABITAT, the Global Water Operators Partnership and Africa WOP. An important outcome of the Cap-Net programme is sharing on-the-ground experience for application in other countries and regions.

Active portfolio. UNDP's active water supply and sanitation portfolio totals about US\$ 170 million in 55 countries, including fragile and post-conflict states. Of this, about US\$ 122 million is dedicated to provision of local access to water supply and/or sanitation, and US\$ 48 million to 'mainstreaming' water supply and sanitation into national governance and poverty reduction frameworks.



EXPERIENCE FROM KENYA: BONDO WATER GOVERNANCE PROJECT

In Bondo district Kenya, a pilot project is underway to enhance water governance using a human rights-based approach. Implemented by local NGO KWAHO, the project aims to spread awareness among the district's 285,000 residents of their right to safe, accessible, sufficient, and affordable water under Kenya's recent water sector reforms, as well as to establish a redress mechanism to remedy inadequate services provision and sector corruption.

Located in southwest Kenya, on the shores of Lake Victoria, Bondo district has long suffered from unreliable water delivery. Corruption has played a part, as has vandalism, shutting down most of the district's water facilities and forcing residents to haul water from Lake Victoria over long distance.

With assistance from KWAHO, the residents have formed a user group to provide a structure for community members to discuss their concerns as well as a platform from which they could engage water service providers with complaints about water service delivery. With the recent water sector reforms in Kenya, consumers were the only actors who were not organised, putting them in a relatively disadvantaged stance in negotiations. Consumers can now engage suppliers from a position of strength.

Kenya's water sector reforms have featured a transition from a highly centralised system of water governance and service delivery to a decentralised model. The Kenyan government has declared that these reforms will be guided by human rights principles as well as the MDGs, and has adopted several policies designed to enhance the right to water and sanitation.

The residents of Bondo have been empowered by their new knowledge of their rights and have actively engaged an anti-corruption complaint line and other redress mechanisms set up specifically to deal with water corruption issues in the region. As a direct result of the project, this complaint line is being scaled up and introduced to other regions.

COMMUNITY WATER INITIATIVE

Launched in 2004, the Community Water Initiative (CWI) provides support for increased access to water supply and sanitation in poor rural communities. CWI is implemented by the GEF Small Grants Programme and is active in 10 countries—Ghana, Guatemala, Kenya, Mali, Mauritania, Niger, Senegal, Sri Lanka, Tanzania, and Uganda.

Since 2004, CWI has provided more than US\$ 2 million in grants of up to US\$ 25,000 to 89 projects, benefiting more than 260,000 people. Grounded in a strong belief that local management and community initiatives play a key role in ensuring and sustaining successful delivery of water and sanitation, CWI supports projects that are decentralised, demand-driven, innovative, low-cost, and community-based.

Among the types of activities supported are: community-based water supply and sanitation services using low-cost systems manageable by communities; water resource conservation and sustainable land management to mitigate the effects of drought and flooding in adapting to climate change; providing clean energy for water pumping; and capacity development for community-level governance, including community water management committees, women's empowerment, and the establishment of water user-fee schemes.

In 2009, two CWI projects were selected among the top 10 finalists for the Kyoto World Water Prize. One of the projects concerned improving groundwater quality through ecosystem management in Sri Lanka, and the other addressed recycling of wastewater for irrigation in Tanzania. In addition, two other CWI projects were selected among the top 30 finalists: a project on sustainable land management and water supply in Ghana, and a project on supplying drinkable water and adapting to climate change in Mauritania.



EVERY DROP MATTERS

Every Drop Matters is a 5-year partnership initiative of UNDP and The Coca-Cola Company. With a budget of \$6.25 million, the project aims to support achievement of the MDGs by improving access to safe drinking water in the countries of Europe and the CIS. The project has three main components: 1) community water stewardship; 2) improved water governance; and 3) raising awareness to promote environmental resource preservation and sustainable use of water for industrial and domestic purposes. Since 2006, 17 projects have been implemented in 7 countries (Armenia, Croatia, Kazakhstan, Romania, Russia, Turkey, and Ukraine) and in one region (Black Sea Basin). Results so far are:

- Improved access for communities to safe drinking water (Turkey, Ukraine and Kazakhstan);
- Preservation of rivers as major sources of drinking water (Croatia and Armenia);
- Developing water and waste management strategies for small rural communities (Romania, Russia and Kazakhstan);
- Improved industrial water management strategies (Black Sea Region);
- Awareness-raising activities to promote responsible water resource management (Black Sea Region).

C. Biodiversity and the MDGs

WHY biodiversity contributes to progress on all the MDGs

Biodiversity—the variety of living things on Earth, the places they inhabit, and the interactions between them—form the basis of human well-being. These natural systems provide us with essential services (‘ecosystem services’), including food production, soil fertility, climate regulation, water purification, flood regulation, and others. Yet, across the planet, biodiversity is being eroded and ecosystem services degraded. Poor people and communities are especially vulnerable to the loss of biodiversity and natural systems. Some 70 percent of the world’s poor live in rural areas and depend directly on biodiversity for their survival and well-being.

Ensuring the conservation and sustainable use of biodiversity, and the equitable sharing of its benefits, helps to meet multiple MDGs.

Biodiversity helps to increase incomes and reduce hunger for poor people and poor communities (MDG 1). The services provided by healthy, intact, diverse ecosystems provide the foundation for economic activity in numerous sectors, including agriculture, forestry, fisheries, mining, and tourism. Worldwide some 1.6 billion people worldwide rely on forest products for their livelihoods. Over 1 billion people depend on fish as a major source of food, even as an estimated 80 percent of fish stocks are fully exploited or overexploited.

The conservation and sustainable use of biodiversity is yielding greater income and improved livelihoods for millions in the developing world. In Namibia, the concession rights from the nation’s network of protected areas are directly benefiting 230,000 people through concession revenues and new jobs. Sales of biodiversity-friendly, shade-grown coffee more than doubled between 2003 and 2006, improving the lives of many poor coffee farm workers.



Sustainable use of biodiversity also supports educational attainment (MDG 2). Ecosystem degradation and biodiversity loss are associated with more time spent by women and children in collecting and transporting fuel and water, reducing the time spent at school. The income earned from livelihoods based on sustainable use of biodiversity enables families to better afford school fees.

Biodiversity contributes to gender equality (MDG 3). Women are often the primary managers of biodiversity at the household level, including crop genetic diversity for smallholder agriculture.

Biodiversity conservation and use is key to improved health for poor people and communities (MDGs 4, 5, and 6). The existence of a variety of ecosystems, species, and genetic diversity is essential to human health, adequate nutrition, and food security. Crop genetic diversity, for instance, is humanity's key to maintaining crop resistance to pests and diseases. Biodiversity also provides materials to treat and cure diseases. Worldwide 1 billion people depend on drugs derived from forest plants for their medicinal needs. Reliance of traditional medicine is highest in the least developed countries, with some 80 percent of Africans depending on traditional medicines, according to WHO estimates.

Biodiversity helps to promote environmental sustainability (MDG 7). Biodiversity and Intact, functioning ecosystems play a key role in ensuring environmental quality, including through watershed protection, erosion control, and purification of air and water. Protecting ecosystems and the services they provide is the key to building resilience against climate change.

WHAT experiences and lessons learnt in this area tell us about what needs to happen for MDG acceleration

The goal of halting the loss of biodiversity by 2010 is the subject of several international agreements, including full integration in the MDGs since 2007. The existence of this target has spurred many countries to action, with some 170 countries now having biodiversity strategies and action plans.

Specific interventions to promote conservation and sustainable use of biodiversity and accelerate attainment of the MDGs include:

Create enabling conditions. Policies to strengthen weak environmental governance and address market failure are critical to finding and implementing win-win solutions at the nexus of biodiversity conservation and poverty reduction. Since most of the world's biodiversity resides outside PAs in lands used for various economic production activities, the integration (or 'mainstreaming') of biodiversity-friendly objectives into policies governing these production sectors is essential for reducing biodiversity loss.

Increase investment. Given climate change and the pace of biodiversity loss (and associated destabilization of ecosystems and their services), the demand for environmental finance is escalating rapidly.

Community-led approaches. Rights-based approaches that give local communities and other key stakeholders an incentive to improve local environmental management are essential for conservation and sustainable use of biodiversity. Local-level involvement is critical not just for community-driven projects, but also to the success of national and international initiatives. Local men and women—whose needs, ideas, roles, contributions, and benefits often diverge—must be seen and treated as important agents of change on the implementation end of the MDG delivery chain.



Extend protection of underrepresented ecosystems. The global protected area estate is not equally representative of all ecosystem types. Some ecosystems, such as marine environments and grasslands, are significantly underrepresented as a proportion of their total area.

Adaptation to, and mitigation of, climate change. Because climate change is a leading driver of biodiversity loss, policies are needed to support protection of ecosystem services that act as 'natural infrastructure' against climate-related stresses and disasters. Protecting ecosystem services in the face of climate change will be imperative to sustaining long-term economic and social development. At the same time, biodiversity-rich forests and peatlands also can provide carbon storage and help to mitigate climate change.

Capacity development. Increasing the capacity to manage biodiversity and sustain the supply of ecosystem services, at the local as well as national level, is essential.

HOW UNDP supports countries in this thematic area and how it contributes to MDG progress

Unleashing the economic potential of protected areas. UNDP works with countries to ensure that their protected area systems are effectively managed, sustainably financed, and contribute to sustainable development. UNDP assists countries with establishing governance frameworks needed to strengthen PA management. The economic potential of PAs is being harnessed by promoting sustainable tourism, encouraging sustainable harvest of natural resources, and developing markets for ecosystem services. The Global Environment Facility is a major financier of UNDP work on protected areas, providing funds to ensure the effective management of protected areas.

Mainstreaming biodiversity into national governance and policy frameworks. UNDP works as an implementing agency in the GEF partnership to mainstream biodiversity into economic sector policies and practices. UNDP is targeting 18 economic sectors, including agriculture, fisheries, forestry, mining, and tourism. Interventions aim to influence the policy frameworks governing these production sectors and help countries to develop accountable decision-making frameworks. UNDP also works at the level of institutions, to build leadership and skills designed to enhance their capacity to address biodiversity management needs in economic sectors.

Environmental finance and markets. UNDP works with programme countries to address market failures that distort prices and lead to over-exploitation of ecosystems and natural resources. We also assist countries with combining and sequencing different sources of funds. As of July 2009, over 72 countries were working with UNDP to address ecosystems and biodiversity through 115 projects financed by the Global Environment Facility (GEF) in the amount of US\$ 461 million, with US\$ 1,168 million in co-financing (not including additional co-financing committed during project implementation).

GEF Small Grants Programme. Through its network of 122 country programmes worldwide, the SGP has supported over 6,500 biodiversity small projects in relation to the sustainable use of biodiversity by local farming communities and indigenous peoples; in developing equitable and effective co-management models for protected areas; as well as in the appropriate recognition and support to indigenous and community conserved areas (ICCAs) which voluntarily conserve biodiversity, but do not necessarily benefit from official state recognition.

Equator Initiative. UNDP's Equator Initiative works to identify, support, and scale up local best practice in biodiversity conservation and poverty reduction. It also facilitates peer-to-peer learning and integrated knowledge management between a growing network of over 1,700 communities to better understand what is working on the ground, what is not, and why.



EXPERIENCE FROM NAMIBIA: IMPROVING THE MANAGEMENT EFFECTIVENESS OF PROTECTED AREAS

In Namibia, a GEF-financed project aimed at *Strengthening the Protected Areas Network (SPAN)* is working to improve management effectiveness of the country's extensive system of protected lands. With its internationally significant hotspots for biodiversity, Namibia has already established an impressive system of state-managed PAs, encompassing 20 game parks and nature reserve sites and covering almost 14 percent of the country's land area. In addition, a strong community-based wildlife conservancy programme has also been established, particularly benefiting rural people. These conservancies have become one of the fastest growing areas of economic development in Namibia.

The combination of state-managed PAs, community-based conservancies, and private reserves offers great promise for protecting biodiversity, sustainably managing the country's natural resources, and contributing to equitable economic and social development. However, these areas currently operate as a patchwork rather than as an integrated system. Among the barriers to existing management effectiveness are: a fragmented policy framework, weak institutional and human capacities, and incomplete bio-geographic coverage.

The SPAN project places strong emphasis on progressive introduction of best practices through proactive knowledge management. SPAN has provided support for the drafting and consultation process for three policy initiatives and helped to develop a draft Human Wildlife Conflict Management policy. The project has also developed a training plan for the Directorate of Parks and Wildlife Management and conducted several specialised training and capacity-building courses.

SHADE-GROWN COFFEE: TRANSFORMING PRACTICES IN THE COFFEE SECTOR

Coffee is the world's largest commodity crop, and when grown on traditional coffee farms, with areas of native forest left to shade plants, is one of the most biodiversity-friendly crops in the tropics. However, small producers on traditional coffee farms are under increasing pressure from more intensive producers, and the conversion of these traditional coffee farms to pasture, intensively managed full-sun or minimal shade monocultures, or urban sprawls results in dramatic declines in biodiversity.

One key way to promote sustainability is to increase market demand for certified sustainable coffee. Currently, shade-grown coffee makes up only a small fraction of global production (probably about 5 percent), but this share is growing rapidly and is expected to accelerate in the coming years.

With funding from the Global Environment Facility, UNDP is working with major coffee traders, roasters, specialty importers, and other partners on a project to transform the way in which coffee companies source supplies. The project aims to establish new, environmentally and socially responsible ways of doing business that the companies can internalize and replicate. The project will also work to increase the volume of Rainforest Alliance-certified coffee sourced from six Latin American countries: Brazil, Colombia, El Salvador, Guatemala, Honduras, and Peru. These countries are among the world's largest coffee producers as well as the site of some of the world's more threatened biodiversity hotspots.



The project is designed to help the existing RA certification system grow beyond a niche initiative and reach a 'tipping point' where it will continue without external donor financing. The project is targeting an increase in the number of RA-certified ha from 93,000 in 2005 to 1.5 million by 2013. On the demand side, the project aims to increase the volume of RA-certified coffee sold from a baseline of 30,000 metric tons to 500,000 metric tons, or about 10 percent of the global market.

Lessons learnt in the six project countries will also be shared with Belize, Costa Rica, Ecuador, and Mexico. Within a few years, the RA certification system is intended to be active in Africa and Asia, as well as Latin America.

D. Sound Management of Land and the MDGs

WHY sound management of land contributes to progress on multiple MDGs

Nearly 2.6 billion people rely on agricultural production systems—including farming, livestock production, forestry, and fishery—for their livelihoods. A majority of this population is poor and highly dependent on subsistence farming and extraction of natural resources for food, fuel, and household incomes. Of these, about 1 billion live in drylands, and face multiple challenges of low and variable water availability, often thin topsoil, and low population density/high dispersal, which increases service delivery cost and reduces market access. Affecting nearly a third of global land surface, land degradation significantly reduces the productivity of dryland ecosystems and poses a serious threat to the food security, income, and livelihoods of rural populations.

Ensuring sound management of land helps to meet multiple MDGs:

Land management helps to increase incomes and reduce hunger for poor people and poor communities (MDG 1). The services provided by land-based ecosystems provide the foundation for economic activity in numerous sectors, including agriculture, livestock production, forestry, water management, mining, and urban centres.

Sustainable use of land also supports educational attainment (MDG 2). Land degradation is associated with more time spent by women and children in collecting and transporting fuel and water, reducing the time spent at school. The income earned from livelihoods based on sustainable use of land resources enables families to better afford school fees.

Socially responsible land management contributes to gender equality (MDG 3). Women are often the primary managers of land resources at the household level. This is increasingly true as a higher proportion of rural livelihoods become women-dominated, due to male migration to cities or abroad. Women are typically considered responsible for procuring fuel for cooking, which may come from increasingly distant sources.

Land conservation and use is key to improved health for poor people and communities (MDGs 4, 5, and 6). Crop genetic diversity and the nutritional quality of food produced from land-based ecosystems are directly related to human health.

Sustainable land management helps to promote environmental sustainability (MDG 7). Healthy ecosystems play a critical role in ensuring environmental quality. Sustainability is ensured not just through technically sound management of land resources, but also through healthy institutional arrangements—land governance—which determine incentives, how disputes are resolved, how land and resource ownership/ access is established, and how costs and benefits are shared.



WHAT experiences and lessons learnt in this area tell us about what needs to happen for MDG acceleration

The ways in which land and land-based natural resources are managed—including the rules that govern who gets to use which land resources under which conditions—is central to MDG achievement in many countries. This is particularly true in poor countries, where people's welfare depends more directly on decisions involving land use, ownership, and management. Due to the complexity of land governance issues and associated conflicts over land resources, there is no one-size-fits-all solution. However, getting the process right is key, and some general principles can and should be derived from experience.

Specific interventions to further promote sound management of land resources and accelerate attainment of the MDGs, include:

Creation of enabling conditions for good governance of land resources. To improve access to productive land resources for poor people and communities, governments need to create conducive legal, policy, and regulatory environments for land management systems that satisfy criteria of equity, efficiency, and environmental sustainability. National strategies should also seek to create a predictable long-term policy environment that attracts investment and also empowers local land users in a credible and enforceable manner.

Capacity development for delivering land tenure, food, and livelihood security. There is much evidence that smallholder food production can be highly efficient as well as environmentally responsible, as small producers have a direct interest in sound land management. Given the diversity of situations, capacity development is required in terms of decision support in development planning with respect to land use planning, agro-ecological zoning, degrees of protected status of the environment, and participatory processes in order to come up with 'win-win' scenarios. Technical support for implementation is important, including access to good practice from a wide range of resources; adaptive research, both generic and site-specific, is also key.

Increase and manage investment and ensure maximum opportunity for rural entrepreneurship. A significant rise in national and international finance (including bilateral and multilateral) will be needed to catalyze existing funding mechanisms and to leverage increased private-sector investment. Ironically, poor countries often invest less than 10 percent of their GDP in the entire rural sector, even when it accounts for up to three-quarters of national employment and one-third or more of GDP. Much research demonstrates that agricultural growth multipliers exist, as do agricultural-industrial linkages. By consciously managing these opportunities—together with credible land reform that puts the basic means of wealth creation in the hands of the largest possible number of potential entrepreneurs—poor countries can achieve rapid economic growth and large gains in poverty reduction. Value addition along the agricultural value chain is also a lesson that can and should be more widely applied.

Enhanced cooperation and partnerships. The management of land-based resources is a central concern of development planning. It affects everyone. Typically, there are complex trade-offs, which are often politicized. National governments, local authorities, private entities, civil society organizations, and communities all have important roles to play. South-South cooperation is vital, as middle-income countries can contribute by sharing relevant expertise, experience, and replicable good practices with less developed countries.



HOW UNDP supports countries in this thematic area and how it contributes to MDG progress

At any given time UNDP manages with its clients and partners well over 300 projects and related activities that are either focussed on, or address a dimension of, land resource management. These projects vary widely in scale, scope, and nature—ranging from national policy mainstreaming to regional initiatives to grants to local communities to help them manage their immediate environment. Some key dimensions of land management and a few examples are indicated below. While many relevant activities are found in the Environment and Energy Group, many others are found in other parts of UNDP. This reflects the fact that land management touches upon many aspects of development and is felt across many MDGs. For example, UNDP's Bureau of Crisis Prevention and Recovery represents UNDP on a European Union-United Nations project on land conflict.

Integrated development approach. Through an integrated development approach, UNDP helps governments establish enabling policy frameworks and build capacity for access to and effective use of land resources by the poor. As an integrating arena, land management requires inclusive decision processes, which UNDP is well equipped to facilitate (see box). For example, in Uganda, with funding from the GEF, UNDP is an active partner in the national Sustainable Land Management platform in the context of the New Partnership for Africa's Development's (NEPAD) TerrAfrica programme, as well as working on an enabling environment for tenure security. With respect to the drier zones of Uganda, UNDP through its Drylands Development Centre has specifically contributed to market access for drylands products through a cross-border project. UNDP has supported some 60 countries in developing National Action Plans to mainstream drylands issues into national development processes.

Advisory and technical services. UNDP provides knowledge-based advisory and technical services. Due to the diverse nature of land issues, many examples can also be found outside UNDP's Energy and Environment Group. For example, through its Access to Justice work, UNDP's Democratic Governance and Poverty Groups support legal aid training to deal with housing and property rights of displaced people in Georgia, while the Democratic Governance Group (DGG) also promotes the property rights of women in Egypt.

Regional cooperation. At the regional level, UNDP has played a critical facilitation role in the establishment of the Southern African Development Community (SADC) Land Reform Technical Support Facility, which interacts with national-level activities, such as a UNDP-supported land tax process in Namibia, lessons from which are available through the sub-region by way of the Facility. Similarly, UNDP supports regional policy dialogue on indigenous, highland and tribal people's rights, including in the context of land development, in Asia. Finally, an example of a classic multi-country sustainable land management activity is the Asian Development Bank-led Central Asian Countries Initiative for Land Management (CACILM), which involves four UNDP country offices and financing from the GEF.

Funding. UNDP funds land management activities through its regular resources, as well as in its role as an implementing agency of the Global Environment Facility in support of national implementation of the United Nations Convention to Combat Desertification (see box). UNDP is also engaged in a range of projects and mechanisms related to payments for environmental services, including carbon sequestration.



EXPERIENCE FROM KENYA: MAINSTREAMING SUSTAINABLE LAND MANAGEMENT INTO NATIONAL DEVELOPMENT PLANNING

In Kenya, UNDP, through its Drylands Development Centre, played a critical facilitation role in inter-ministerial policy development related to the specific development needs of land users occupying the 80 percent of the country which is arid or semi-arid. Through a participatory and consultative process involving government, civil society, international experts, donors and others, a new approach was developed which places the challenge of land-water management in the development context of historical marginalization and inadequate service delivery, due in part to low population density and high dispersal.

For example, although Kenya scores much higher than expected (given its GDP) on the Human Development Index, there are very large differences in human development indicators between dry areas and those that are more fertile and/or well-watered. A new ministry has been created with a focus on drylands populations, through which related planning and funding is coordinated, and the policy recommendations incorporated into Kenya's long-term master plan, Vision 2030.

FINANCING SUSTAINABLE LAND MANAGEMENT

An essential part of UNDP's GEF-funded activities is support for on-the-ground investments to address land degradation. UNDP GEF promotes sustainable agricultural practices—such as crop diversification, crop rotation, water harvesting, and small-scale irrigation schemes—which can help the productivity of both rain-fed and irrigated agriculture. UNDP GEF also promotes sustainable rangeland management through the strengthening of viable traditional rangeland management systems and other measures that improve soil and water conservation, while supporting UNDP GEF's goal of conservation and sustainable use of biodiversity.

For example, through the UNDP-GEF project *Promoting Integrated Ecosystem and Watershed Management in Honduras*, forms of production that contribute to sustainable land management were supported and, at the same time, pressures on the biodiversity contained in natural ecosystems and agro-ecosystems were reduced. Support to forestry cooperatives through this project provides an incentive to protect the forests, which are of high biodiversity importance and contain large carbon reserves. The promotion of sustainable agricultural practices can help to avoid soil degradation, and improve incomes and the value of land. This also allows producers to maintain production levels, to diversify their production, and to withstand environmental shocks such as droughts.



E. ODS Phase-Out, Sound Management of Chemicals and the MDGs

WHY sound management of chemicals contributes to progress on all the MDGs

When used appropriately, chemicals can play an important role in human development. Without good management practices, however, they can pose significant risks to human health and the environment. Poor people and communities in developing countries are most vulnerable to the harmful effects of improper use. In particular, management of ozone-depleting substances (ODS), most of which are potent greenhouse gases with very high global warming potential, is an important contributor in the fight against climate change.

Ensuring ODS phase-out and sound management of chemicals (SMC) helps to meet multiple MDGs:

Proper use of chemicals can contribute to poverty reduction (MDG 1). For instance, the appropriate application of fertilizers and pesticides can boost the productivity of agricultural lands for smallholder and subsistence farmers. SMC is essential to ensure that poor farmers and communities can derive maximum benefits from chemicals while maintaining a healthy environment and safe working conditions.

Sound management of chemicals also supports educational attainment (MDG 2). Children are particularly vulnerable to adverse health impacts from exposure to chemicals. Ensuring proper management and use is crucial to safeguarding children's mental and physical development and enabling them to attend school.

Sound management of chemicals contributes to gender equality (MDG 3). Appropriate management and use of chemicals can improve women's living and working conditions. Increasing their knowledge about health risks and proper handling of chemicals can empower women to better protect themselves and their families.

Sound management of chemicals is key to improved health for poor people and communities (MDGs 4, 5, and 6). While the use of pesticides and other chemicals prevents millions of death worldwide in the fight against vector-borne diseases, such as malaria, sound management of these chemicals is essential to minimize human exposure to these chemicals and maximize the benefits from their use. A number of man-made chemical substances found in food, water, and consumer products have been found to interfere with key stages of reproductive and maternal health.

Proper use of chemicals helps to promote environmental sustainability (MDG 7). The production, use, and handling of chemicals, if not properly managed, can lead to severe environmental damage and ecosystem disruption. SMC helps to prevent or minimize unsafe release of chemicals into the environment. Reduced emissions of ODS is a specific target under MDG 7.

WHAT experiences and lessons learnt in this area tell us about what needs to happen for MDG acceleration

Sound management of chemicals can help reduce the exposure of vulnerable populations to harmful substances and the resulting adverse effects on human health and environmental quality. The phase-out of ozone-depleting substances (ODS), the particular group of chemicals under the Montreal Protocol, provides one of the best examples of concerted global action to meet the MDGs. Massive reductions in ODS have been achieved since the Protocol came into force, bringing significant human health benefits (reduction of skin cancer, cataracts, etc.) as well as safer labour conditions in ODS-related sectors and industries. Since most of the ODS controlled under the Protocol are powerful greenhouse gases with very high global warming potential, these reductions have made an important contribution to climate change mitigation.



Specific interventions to further promote ODS phase-out and sound management of chemicals to accelerate attainment of the MDGs include:

Phasing out HCFCs. Over the past two decades, hydrochlorofluorocarbons (HCFCs) have come into wide use as substitutes for ODS. HCFCs have low ozone-depleting potential but high global warming potential. Dramatic increases in the production and consumption of HCFCs now present great threats to climate change and the ozone layer.

Managing ODS banks. ODS contained in discarded equipment ('ODS banks') threaten to leak into the atmosphere. The destruction of ODS banks, combined with the phase-out of HCFCs, could potentially avoid the emission of some 30–36 billion metric tonnes of CO₂ equivalent emissions over the next 2–3 decades. Several demonstration projects are currently being developed in this area.

Market transformation. Ensuring successful uptake of energy-efficient, ozone- and climate-friendly products will require support for market transformation and removal of market barriers. Various GEF-funded projects are currently being developed/implemented, including legislative actions, labelling programmes, and early-retirement schemes for old and energy-inefficient equipment. Efforts are being made to link these initiatives to ongoing ODS-elimination programmes. These programmes provide excellent opportunities to combine and sequence various sources of funding to achieve these goals.

Mainstreaming sound management of chemicals into MDG-based national plans. Sound management of chemicals should be integrated into national and sector development plans. Emphasizing the economic benefits of SMC can help to justify incorporating chemicals management as a part of planned development interventions. The focus here is to find 'win-win' situations with a catalytic effect, to amplify the impact of interventions.

Policy and economic guidance. Strategic policy and economic guidance is needed in order to raise awareness and understanding of the interaction of sound management of chemicals and attainment of the MDGs. Increased attention to designing interventions targeting vulnerable populations as well as emphasizing action on persistent and bio-accumulative substances can help accelerate achievement of the MDGs.

Safe alternatives to persistent organic pollutants (POPs) and managing legacy hazardous waste problems. POPs are bio-accumulative and bio-magnifying substances that pose significant threats to human health. In many developing countries, long periods of inadequate waste management practices have left a legacy in the form of stockpiles of obsolete pesticides and industrial chemicals as well as contaminated land and water. Introducing non-hazardous alternatives to POPs and removing hazardous waste stockpiles can reduce the exposure of vulnerable population groups to toxic substances and contribute to achievement of the MDGs.

HOW UNDP supports countries in this thematic area and how it contributes to MDG progress

UNDP provides a variety of services to help governments ensure sound management of chemicals and achieve the MDGs.

Assistance with national policies and programmes. UNDP assists governments in developing effective national policies and programmes to ensure SMC and meet ODS elimination targets. This involves analysis of legal and regulatory frameworks, including those governing ODS and specifically HCFCs. Such efforts take into account many factors, including protection of livelihoods, ensuring competitiveness, and trade implications of national and international regulatory action. Currently, UNDP is actively assisting 11 countries in mainstreaming chemicals management into the national development planning and policies.



Developing national capacity for sound management of chemicals. UNDP supports the building of regulatory and management systems for particularly hazardous substances. This includes training programmes to help avoid releases and exposure to highly hazardous chemicals in many countries across regions and continents.

Stakeholder discussions. UNDP helps governments bring different stakeholders and partners to the table to discuss opportunities and problems. Various programmes have been established, including inter-ministerial committees and/or steering committees involving governments, NGOs, and the private sector.

Technical support and assistance. UNDP provides governments with technical support and information regarding SMC, including ozone- and climate-friendly alternatives to ODS. We facilitate access to the best available alternative technologies as well as assisting governments with hands-on training sessions and on-site demonstrations. For example, UNDP is currently working with several countries—including Brazil, China, India, Indonesia, Malaysia, Mexico, and Nigeria, to name just a few—to develop HCFC phase-out programmes. Projects are underway in 20 countries to introduce non-hazardous alternatives to POPs and remove stockpiles of hazardous waste.

EXPERIENCE FROM BRAZIL: SOUND MANAGEMENT OF CHEMICALS THROUGH EARLY RETIREMENT OF HOUSEHOLD REFRIGERATORS

Of the 50 million household refrigerators currently in use in Brazil, an estimated 11 million contain CFCs. Given the high global warming potential of CFCs, this is the equivalent of 33 million tons of CO₂ that threaten to leak into the atmosphere if appropriate disposal measures are not taken.

To help prevent the leakage of CFCs from these refrigerators, the public and private sector are joining forces to establish a comprehensive 'early retirement programme' to replace 1 million old refrigerators per year with new, energy-efficient ones and ensure proper disposal of the retired units. The initiative requires the involvement of all relevant stakeholders, including not only governmental entities and electric power utilities, but also consumers as well as enterprises involved in the transportation, storage, disassembly, recycling, and disposal of old refrigerators.

The initiative is designed to produce numerous benefits, including:

- increased energy efficiency
- increased disposable income for households (due to the lower operating costs of more efficient refrigerators)
- protection of the ozone layer
- mitigation of climate change
- recycling of components and metals
- job creation
- reduction of illegal grid connections



REDUCING HARMFUL RELEASES FROM MEDICAL WASTE MANAGEMENT

Exposure to dioxins and mercury affects health and environmental quality. The health sector itself is a major source of dioxin and mercury releases to the global environment, primarily as a result of low technology medical waste incineration as well as the improper disposal of mercury-containing devices such as thermometers and blood pressure meters. In many developing countries, the health care sector lacks essential equipment and knowledge for proper waste treatment, as well as resources for training, technical assistance, and policy development.

With financing from the Global Environment Facility (GEF), a partnership led by UNDP is assisting several countries—including Argentina, India, Latvia, Lebanon, Philippines, Senegal, and Vietnam—in developing and sustaining best practices in medical waste management practices in ways that are both locally appropriate and globally replicable. In each participating country, the project is developing a best practice waste management model for the health care sector, through collaboration with at least one large hospital and an appropriate combination of smaller clinics, rural health programmes, and central treatment facilities.

The project primarily promotes the use of non-burn waste treatment technologies, improved waste segregation practices and appropriate alternatives to mercury-containing devices. In Tanzania, an additional project component will develop, test, and disseminate affordable and effective alternative medical waste treatment technologies appropriate to conditions in sub-Saharan Africa.

The project's ultimate goal is protection of public health and the global environment from the impacts of dioxin and mercury releases. If replicated and sustained, best practices and techniques initiated during the project are expected to substantially reduce releases of dioxins and mercury to the environment in participating countries.



V. Conclusion

As this booklet has shown, investing in people's ability to manage ecosystems sustainably and address climate change, along with increased access to clean, affordable, and reliable energy services for poor people and communities, is a viable strategy for making progress across all the MDGs. Improved ecosystem management and innovative technological solutions can reduce the vulnerability of the poor, maximize the contribution of natural resources to development, and help developing countries adapt to the consequences of climate change.

Experiences from countries around the world attest to the fact that sound management of environmental and energy resources leads to important gains in income (MDG 1), educational attainment (MDG 2), gender equality and women's empowerment (MDG 3), and improved health outcomes (MDGs 4, 5, and 6), as well as environmental sustainability (MDG 7) and strengthened global partnerships (MDG 8). The lessons learned from these experiences in pro-poor, gender-sensitive, community-led development centred on sound natural resources management and increased energy access can be drawn upon over the next 5 years for sustained and accelerated progress toward all the MDGs.

Working closely with partners, UNDP stands ready to assist nationally led efforts to achieve the MDGs through investments in improved management of environmental and energy resources. With these efforts, we aim to help countries not only accelerate progress toward MDG attainment, but also to ensure that the development options they choose provide resilience against the impacts of future climate change and offer a sustained stream of benefits over time.



NOTES



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