# THE COOPERATION BETWEEN UNIDO AND THE GLOBAL ENVIRONMENT FACILITY

## A partnership for green energy and the environment

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Energy access and energy security, climate change and environmentally-sustainable development have steadily gained visibility and attention at the national, as well as international level.

They are also central to economic and social development, and particularly to achieving the Millennium Development Goals (MDGs).

Reconciling the legitimate aspirations of both individuals and nations to move out of poverty and create wealth, with our planet's finite resources, has become an overarching challenge for the global community.

Profound changes are underway to transform the way we supply, transform, deliver and use natural resources, including energy—a trend that a revitalized global dialogue on environmental issues can reinforce, leading to a sustainable future for all with multiple co-benefits, including for development, human health, environment and climate.

UNIDO, as a specialized agency of the United Nations system with a mandate to promote and support sustainable industrial development, has been working closely with the Global Environment Facility (GEF) to address global challenges associated with energy, climate change, phasing out of ozone depleting substances and the production and use of persistent organic pollutants in around 90 countries.

This brochure on the UNIDO-GEF cooperation and partnership will give readers a better and more holistic understanding of the work we do together. It demonstrates the GEF's pivotal role in providing technical cooperation and financial support to programmes in different thematic focal areas. The publication also advocates the role and impact of projects under the UNIDO-GEF partnership.


Kandeh K. Yumkella,
UNIDO,
Director-General

I am confident that we will develop new projects and initiatives in the relevant focal areas for the benefit of our Member States.

Kandeh K. Yumkella
UNIDO
Director-General

This year the GEF marks its 20th anniversary. These two decades have shown that operating as a network has allowed the GEF to draw on the expertise and capacities of civil society and the private sector, as well as multilateral development banks and United Nations agencies, including UNIDO.

This year also marks another important milestone in GEF's history. Five years ago, in December 2006, the GEF Council granted UNIDO direct access to the GEF trust fund resources and recognized UNIDO's comparative advantage in being able to link the issues of energy efficiency, renewable energy, POPs, ODS, and sustainable development within the context of industrial sectors. Since then UNIDO has enhanced the GEF portfolio in a myriad of ways—specifically by ensuring green industrial growth across the developing world.

The West Africa Energy Programme, for example, which focuses on renewable energy and energy efficiency in 18 West African countries, most of which are Least Developed Countries, targets energy access activities for the poor, through nationally-prioritized efforts. West Africa of course is just part of the story. Today, UNIDO has the responsibility for close to US$1 billion of GEF leveraged funding. This includes GEF grants for GEF-supported projects under various focal areas, as well as significant co-financing from other sources, including the private sector.

Monique Barbut,
Global Environment Facility,
Chief Executive Officer
and Chairperson

UNIDO has proven to be a solid partner of GEF, and we are sure our ties will develop further. Working together with UNIDO we can boost energy efficiency, tackle existing barriers to renewable energy technologies, and promote energy access to the poor.

Monique Barbut
Global Environment Facility
Chief Executive Officer and Chairperson

# The cooperation between UNIDO and the Global Environment Facility (GEF)

# Introduction: UNIDO–GEF collaboration

Through its strategic work under the energy and environment thematic area, UNIDO has fostered a strong partnership with the Global Environment Facility.

The United Nations Industrial Development Organization (UNIDO) is a specialized agency of the United Nations, which works to promote and accelerate sustainable industrial development in developing countries and economies in transition. UNIDO groups its activities within the following three thematic areas: Poverty reduction through productive activities, Trade Capacity-Building, and Energy and environment. It is through its strategic work under the energy and environment thematic area that UNIDO was able to foster a strong partnership with the Global Environment Facility (GEF).

Established in 1991, the GEF, which celebrates its 20th anniversary this year, is considered to be the largest funder of projects that benefit the global environment, providing grants to developing countries and countries with economies in transition for initiatives falling into the focal areas of biodiversity, climate change, international waters, land degradation, chemicals (comprises persistent organic pollutants (POPs), ozone depleting substances (ODS) and sound chemical management including mercury).

Since its establishment, the GEF has allocated US$9.2 billion, supplemented by over US$40 billion in co-financing, for more than 2,700 projects in more than 165 countries. The GEF trust fund is replenished every four years. The fifth replenishment of the GEF (for the GEF-5 phase 2010-2014) has been the most successful one in GEF's history.

As of November 2010, the level of new donor pledges for GEF-5 amounted to US$3.54 billion which is equivalent to a 53.4 per cent increase over the GEF-4 level. This enabled the total GEF-5 replenishment to reach US$4.34 billion.

UNIDO's cooperation with the GEF dates back to the 1990s when UNIDO acted as an Executing Agency (EA) of the GEF, executing UNDP, UNEP, and World Bank-implemented projects in GEF's climate change, chemicals and international waters focal areas. In this capacity UNIDO offered services through its technical branches (in the current organizational structure the branches are the Energy and Climate Change Branch, the Environmental Management Branch and the Montreal Protocol Branch within the energy and environment thematic area).

UNIDO's partnership with the GEF was enhanced in 2000, when at its fifteenth meeting the GEF Council, taking into account UNIDO's comparative advantage in the area of POPs and sound chemical management, expanded UNIDO's status as an EA and granted it with the opportunity to directly access resources for preparation and implementation of POPs projects under GEF's chemicals focal area.

As a result, UNIDO developed a strong POPs portfolio, covering a wide range of activities, including preparation and implementation of the National Implementation Plans (NIPs), capacity-building for POPs assessment, as well as implementing the BAT/BEP (best available technologies/best environmental practices) activities to reduce or eliminate POPs emissions and wastes.

Following that, in 2006, at the GEF's thirtieth Council meeting, based on its recognized comparative advantage, UNIDO was granted direct access to the GEF climate change, biodiversity (under the biotechnology window), international waters, chemicals, and ODS focal area funding on an equal basis with the rest of the GEF Agencies. This decision provided UNIDO with a unique

opportunity to enhance the impacts and potential synergies of its GEF portfolio through development and implementation of projects under the GEF focal areas: Climate Change Mitigation, Chemicals (POPs, ODS phase out and sound management of chemicals including mercury, as well as international waters.

Today, Energy and Climate Change Branch's GEF portfolio supports projects in GEF's climate change focal area that focus on (i) providing access to modern energy services for the poor through rural energy for productive use with emphasis on renewable energy; (ii) increasing productivity and competitiveness through improving industrial energy efficiency projects; and (iii) reducing GHG emissions through capacity-building projects which respond to the UNFCCC guidance.

Complementing that, the Environmental Management Branch continues to expand its portfolio under GEF chemicals and international waters focal areas by offering technical and capacity-building support in the areas of (i) cleaner and sustainable production; (ii) POPs management and disposal; and (iii) water management, focusing on water resources use, sustainable use of integrated trans-boundary river basins, wetlands, coastal zones and large marine ecosystems, and recovery and sustainable management of industrial fisheries.

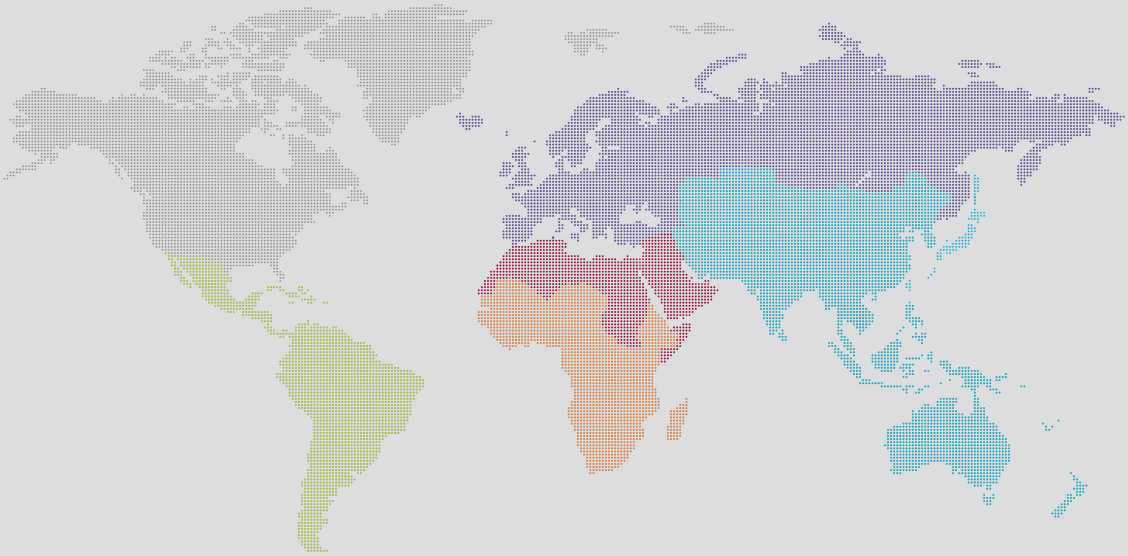
Moreover the GEF-UNIDO portfolio is further enhanced through the work of the Montreal Protocol Branch, which offers technical assistance and institutional support for management and destruction of ODS in economies in transition, with the GEF's ODS focal area. Finally, it should be mentioned that UNIDO-GEF portfolio benefits as a whole from UNIDO's ability to skillfully engage small and medium enterprises (SME's) in its projects, as well as from the projects which engage multiple focal areas (e.g. projects promoting synergies between climate change and elimination/phase-out of POPs and ODS).

Although UNIDO has not implemented any GEF projects under its poverty reduction through productive activities and trade capacity-building thematic priorities, the GEF-UNIDO projects under the energy and environment thematic pillar have had positive spillover effects and have contributed towards the overall objectives of the two former pillars.

For instance UNIDO-GEF cooperation promoting renewable energy resources in rural communities have contributed towards the broader goal of poverty reduction by allowing communities to use energy for productive use. Similarly, projects promoting industrial resource- and energy-efficiency, as well as cleaner and sustainable production techniques, have helped many industries to become more competitive, thus allowing them to benefit from increased trade flows.

Finally, UNIDO-GEF partnership has benefited UNIDO not only in terms of providing it with direct access to GEF funding for UNIDO's technical cooperation projects, but also in terms of helping UNIDO to comply with the GEF fiduciary standards, which are consistent with international best practice. It was in November 2010, when the GEF Council acknowledged that UNIDO has complied with all GEF fiduciary standards and is currently in the process of further refining the implementation of its financial management and control frameworks. This Council decision was once again confirmed during the GEF's fortieth Council meeting in May 2011.

## Countries benefiting from UNIDO–GEF projects



### AFRICA

Angola
Benin
Botswana
Burkina Faso
Burundi
Cape Verde
Central African Replubic
Chad
Congo
Congo DR
Djibouti
Eritrea
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea Bissau
Ivory Coast
Lesotho
Liberia
Malawi
Mali
Mauritania
Mozambique
Niger
Nigeria
Rwanda
Sierra Leone
Senegal
Seychelles
Soa Tome and Principe
South Africa
Swaziland
Tanzania
Togo
Uganda

TOTAL: 37

### ARAB STATES

Algeria
Egypt
Jordan
Lebanon
Libya
Morocco
Sudan
Syria
Tunisia
Yemen

TOTAL: 10

### EUROPE & CIS

Albania
Armenia
Azerbaijan
Belarus
Bosnia and Herzegovina
Bulgaria
Croatia
Czech Republic
Hungary
Kazakhstan
Latvia
Lithuania
Macedonia
Moldova
Poland
Romania
Russia
Serbia
Slovakia
Tajikistan
Turkey
Ukraine
Uzbekistan

TOTAL: 23

### ASIA & PACIFIC

Cambodia
China
India
Indonesia
Iran
Lao PDR
Malaysia
Mongolia
Nepal
Pakistan
Philippines
Sri Lanka
Thailand
Vietnam

TOTAL: 14

### LATIN AMERICA & CARIBBEAN

Bolivia
Ecuador
Guatamala
Mexico
Peru
Venezuela

TOTAL: 6

Grand total: 90 countries

Project volume: US$228.4 million

# UNIDO and GEF: Facts and figures

The analysis of the GEF investments shows the predominance of biodiversity and climate change projects in its portfolio, with 33 per cent and 32 per cent.

## GEF Overall Portfolio Facts

The investments in international waters and multi-focal area (those combining more than one focal area) have also been significant, with 13 per cent each. In 2002, land degradation and POPs were added as focal areas to the portfolio, accounting for four per cent respectively since then. Activities related to ozone depletion are limited to countries with economies in transition in Central and Eastern Europe and the former Soviet Union, and account for two per cent of the GEF investments.

The regional breakdown of the GEF resources shows that Asia accounts for the largest share, with 26 per cent; followed by Africa and Latin America and the Caribbean (LAC), with 23 per cent and 21 per cent respectively. Global projects as well as projects in Europe and Central Asia (ECA) region account for 13 per cent respectively, while regional initiatives account for four per cent of the investments.

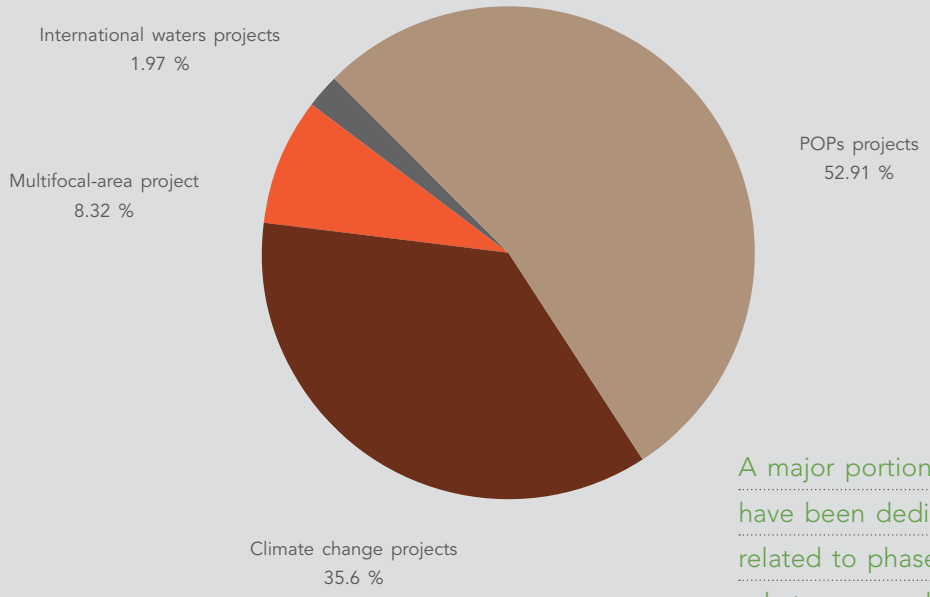
## UNIDO-GEF Portfolio Facts

The analysis of UNIDO-GEF project portfolio shows that since 2000, when UNIDO's opportunities as an EA were expanded, up to this date, including the recently approved GEF-5 projects, UNIDO accessed US$228.4 million of GEF project grant financing, leveraging US$809.53 million in co-financing.

Out of this total, US$120.9 million of GEF grants (52.91 per cent) have gone towards POPs projects, US$ 81.32 million (35.6 per cent) to climate change (CC) projects, US$19 million (8.32 per cent) towards multi-focal area (MFA) projects, US$4.50 million (1.97 per cent) towards projects in international waters (IW), and finally US$2.72 million (1.19 per cent) towards projects dealing with ozone depleting substances (ODS).

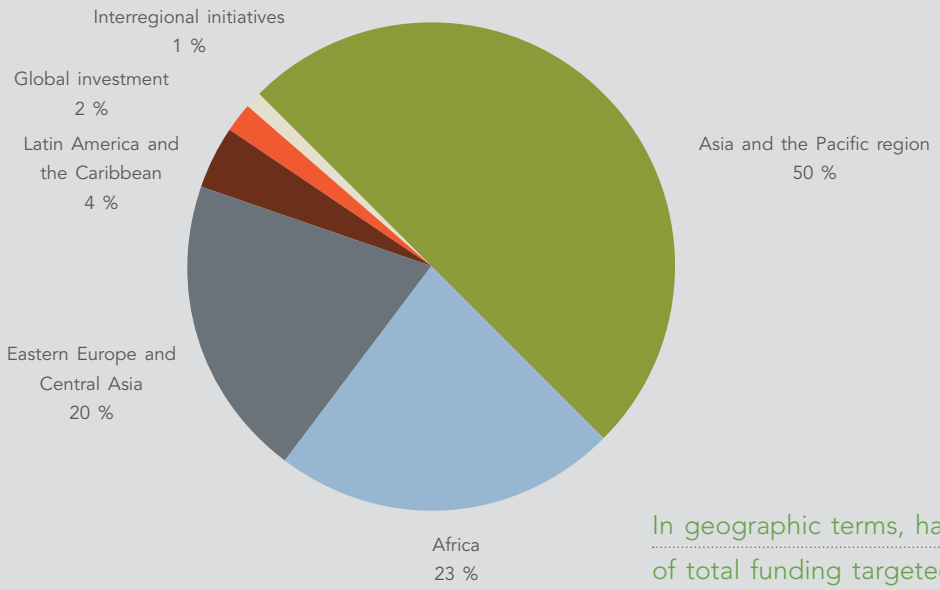
The regional breakdown of the UNIDO-GEF portfolio demonstrates that projects in Asia account for the largest share of 50 per cent. This is followed by Africa and Eastern Europe and Central Asia (ECA) regions, accounting for 23 per cent and 20 per cent respectively. Finally, Latin America and the Caribbean (LAC), global investments, and inter-regional initiatives (involving multiple countries from more than one region) take up four per cent, two per cent, and one per cent of the portfolio respectively.

## Size of the UNIDO-GEF portfolio by focal area (2000-2010)




A major portion of project funds have been dedicated to activities related to phase-out ozone-depleting substances, and reduce CO2 emissions.

## Geographic focus of the cooperation between GEF and UNIDO (2000-2010)




In geographic terms, half of total funding targeted Asia and the Pacific region, followed by funding to projects in Africa and Eastern Europe and Central Asia.

# Partnership for environment and energy

Under its energy and environment thematic priority, UNIDO works with industries to help them adopt cleaner, resources- and energy-efficient and low-carbon patterns of production and investment.

This contributes to mitigating environmental challenges and adapting to climate change. In addition, specifically in rural areas UNIDO facilitates the provision of renewable energy resources.

In this context, UNIDO focuses on two key strategic areas: (a) promoting the cleaner and more efficient use of resources and energy by industry; and (b) facilitating productive activities (particularly in rural areas) through the provision of modern energy supplies based on renewable energy.

Where industry is already established, UNIDO offers technical cooperation to industry and enterprises to become more sustainable in their use through resource and energy efficiency measures, including systems optimization approaches, and by supporting the strengthening of international and national energy/environment management standards.

The focus of UNIDO-GEF projects is to assist countries to put in place policy, institutional and financial frameworks, to find technological solutions that promote resource- and energy-efficiency solutions, as well as to adopt cleaner and sustainable production techniques within industries. With major activities in GEF's climate change, international waters, and chemicals (POPs, ODS etc) focal areas, UNIDO supports more around 90 countries in achieving sustainable industrial development under the GEF mandate by relying on its comparative advantage strengths.

In addition, UNIDO's portfolio share of multi-focal area (MFA) projects (e.g. projects generating global environmental benefits by creating synergies between chemicals and climate change focal areas) is expanding.

In addition to assisting developing countries and economies in transition for implementation of GEF-funded projects unilaterally, UNIDO has collaborated with other GEF agencies (e.g. EBRD, FAO, World Bank, UNEP, UNDP) on project implementation. Details on such projects are provided in the relevant focal area sections.

## UNIDO activities under GEF climate change focal area

UNIDO's activities assigned to the Energy and Climate Change Branch correspond nicely to the requirements of the GEF's climate change focal area, which has under its mitigation cluster project portfolios in energy efficiency, renewable energy, technology transfer, sustainable transport and urban development, and sustainable forest management fields.

UNIDO-GEF climate change project portfolio supports patterns of energy uses that mitigate climate change and are environmentally sustainable, those that promote energy efficiency and energy management standards, as well as those that support adoption of renewable energy technologies. In addition, UNIDO-GEF projects aim at enhancing energy access in developing countries, primarily in rural areas, as a fundamental means to create value-added products and reduce poverty.

UNIDO is the only GEF agency which focuses on an industry integrated approach and, therefore, holds a distinctive niche in energy development for: (i) promoting and supporting industrial energy efficiency and renewable energy technologies for productive uses; (ii) simultaneously enhancing the competitiveness in industries by

reducing industrial energy costs and fossil fuel dependency; and (iii) reducing the impact of climate change by decreasing the carbon emissions of industries.

## Energy efficiency

Improving energy efficiency in industry is one o the most cost-effective measures to help supply-constrained developing and emerging country economies meet their increasing energy demand and loosen the link between economic growth and environmental degradation.

UNIDO takes a comprehensive approach in addressing the barriers to continuous improvement of industrial energy efficiency through its GEF-funded projects. The Organization successfully builds on its experience and unique expertise in sustainable industrial development providing policy support services and capacity-building geared towards market transformation for industrial energy efficiency. UNIDO's approach in the energy efficiency projects is based on two core concepts: energy system optimization (ESO) and energy management standards (EMS).

UNIDO-GEF project in China entitled "Energy Conservation and Greenhouse Gas (GHG) Emissions Reduction in Chinese Township and Village Enterprise (TVE)" serves as a successful example of the types of achievements that have been promoted through the UNIDO-GEF collaboration in the field of energy efficiency. The GEF financing provided to this project in the amount of US$7,992,000 was able to leverage a co-financing from UNIDO, government entities, beneficiary enterprise, as well as the private sector amounting to more than US$150 million (a significantly higher amount compared to the originally planned sum of US$10,550,000).

The project aimed at reducing GHG emissions in China's TVEs in four sectors namely brick, cement, metal casting and coking. The project was designed to address key market, policy, technological, management and financial barriers, and induce a market transformation supportive of key energy efficient technologies and products in the selected TVE sectors. The TVEs from the brick, cement, metal casting and cooking sectors were selected as the main beneficiaries of the project since GHG emissions from these four TVE sectors constitute one-sixth of China's overall GHG emissions. An assessment conducted demonstrated that TVEs average relative energy consumption was 16 per cent to 60 per cent higher than that of newly-available technologies and that the low-quality products produced by the TVEs resulted in additional energy use downstream.

The activities of the project aimed at: (i) creation of institutional mechanism for barrier removal at the national, county or enterprise level; (ii) establishment of incentives and monitoring systems to strengthen existing regulatory programmes at the county level; (iii) building technical capacity for energy efficiency and product quality improvement in TVEs; (iv) creation of access to commercial financing for TVE in the four sub-sectors; (v) commercialization of the financing of TVE energy conservation projects; and (vi) expanding the application of best practices for local regulatory reform to the national level.

Among key elements of success of the project were such factors as the strong support extended by the Ministry of Agriculture (MOA), as well as the proactive use of national and local policy implementation committees, which, jointly with the concerted efforts made by the project management office, provided strong and effective project leadership and co-ordination. Moreover, proper project design and numerous adjustments to evolving project circumstances, including early implementation results, are viewed as critical to the project's success.

In order to ensure project sustainability, building on the work in the eight counties, a barrier removal framework able to support TVEs across China was put in place. By the end of the project, this framework had demonstrated that removing barriers leads to win-win solutions. A national Policy Implementation Committee (PIC) was assigned to oversee the replication and dissemination of the barrier removal activities across China. The project has been rated as very successful in achieving its objectives by various partners in their evaluations reports. Specifically, the independent GEF Evaluation Office has officially published the case study on the China TVE project to showcase the catalytic role of the GEF concluding that:

"The main findings of the final evaluation report and the conclusions drawn from the evaluation stand to prove that the TVE project has been very successfully

implemented, with unexpectedly greater GHG reduction achieved and remarkable demonstration and replication results scored, leaving behind a strong sustainability legacy. Moreover, based on the main findings, the TVE project seems to be very suitable for UNDP/UNIDO and GEF promotion as a world best practice project in the rural industry/SME sector because it has proved sound sustainability and impact."

## Cooperation UNIDO—EBRD

The "Market Transformation Programme on Energy Efficiency in Greenhouse Gas-Intensive Industries in Russia" project, currently under implementation, serves as a highlight of inter-agency cooperation, whereby UNIDO and EBRD developed a strong partnership to focus on energy efficiency solutions for energy and greenhouse gas (GHG) intensive industries in the country. The GEF financing provided to this project in the amount of US$15,385,000 was able to leverage a co-financing in the amount of US$135,750,000.

The project focuses on a number of large energy-intensive industries and Small and Medium Enterprises (SMEs). As part of this approach, ten large enterprises and fifty SMEs are receiving intensive training and support and it is expected that by the end of the project they will have implemented full scale energy management systems (EMS). Through interventions in the selected enterprises it is expected that the project will showcase the cost effectiveness and the competitive advantages of such measures to other companies across the country. These developments can be the basis for the introduction of a national energy management standard and future voluntary agreements.

In addition, it is expected that combining the energy efficiency capacity-building efforts with concrete financing opportunities for energy efficiency investments (i.e. EBRD financing tools, the Russia Sustainable Energy Financing Facility (RUSEFF) and Sustainable Development financing lines, carbon finance, and specialized loan or equity facilities) will considerably increase the impact of the project. Thus, the project successfully combines UNIDO's expertise in facilitating technology transfer and providing technical assistance on energy management systems, with EBRD's financing expertise in the Russian Federation.

## Renewable energy

Access to clean and affordable energy is one of the main prerequisites for sustainable economic and social development. In its renewable energy project portfolio UNIDO recognizes the importance of de-coupling economic and social development from resource utilization and environmental degradation. It strives to promote sustainable patterns of energy production and consumption through innovative and clean technologies, using locally available renewable resources-including small hydropower, bio energy, solar and wind power.

UNIDO's services include the implementation of renewable energy demonstrations projects, policy support to create a favourable environment for renewable energy technologies, and capacity-building in the form of local training, workshop and targeted publications. UNIDO-GEF renewable energy project portfolio assists developing courtiers and economies in transition by (i) enhancing access of the poor to modern and affordable energy services in rural areas to stimulate income generation activities; (II) encouraging creation and development of small and medium enterprises (SMEs) by supporting the use of locally available renewable energy sources for productive uses; and (iii) by engaging in activities aimed at mitigating climate change by curbing carbon emissions in the industrial sector and decreasing dependency on fossil fuels.

UNIDO GEF-financed project approaching its completion in March 2012, implemented jointly with UNEP, in Zambia entitled "Renewable Energy based electricity generation for isolated Mini-Grids in Zambia" serves as a successful example of the types of achievements that have been promoted through the UNIDO-GEF collaboration in the field of renewable energy. The GEF financing provided to this project in the amount of US$2,950,000 was able to leverage a co-financing from the Government of Zambia, as well as from Zambia Electricity Supply Corporation Limited (ZESCO), Rural Electrification Authority (REA), and UNEP in the amount of US$5,740,000.

The main objective of this project is to help reduce the global GHG emissions by promoting renewable energy based mini-grids for rural electrification in Zambia. Furthermore, the project aims at demonstrating the technical and financial viability of renewable energy

based mini grids under various investment business models, and removing the barriers to their development and wide replication. In particular, the project demonstrates the viability of new institutional and financial practices that would enable private enterprises/companies to become power producers and energy service providers, and link reliable energy services with productive use activities to enhance the employment opportunities in the rural areas of Zambia. The project targets rural communities, government (e.g. Department of Energy, REA) and financial institutions, as well as end users as its target beneficiaries.

The main activities envisioned for this project consisted of provision of technical assistance in the evaluation and design of the renewable energy policy and regulatory framework of Zambia; institutional strengthening and capacity development to support renewable energy development in the country; development of national and local capacities to facilitate commercial deployment of renewable energy technologies; development and implementation of an effective and innovative financing plan and procedures for promoting renewable energy based mini-grid projects; and design, installation, implementation and promotion of replication of pilot renewable energy rural mini grids for rural electrification, comprising of a:

- 1,000 kW small hydro mini grid in Shiwang'andu in Chinsali District;
- 36 kW solar PV mini grid in Mpanta; and,
- 1,025 kW biomass gasifier powered mini-grid (with a 25 kW demonstration unit at Ndola and a 1,000 kW mini grid at Kitwe).

To date, the 1,000 kW small hydro mini grid at Shiwang'andu has been constructed and is expected to become operational in October 2011, while the solar PV mini grid at Mpanta is expected to start operation in December 2011. In addition, the 25 kW biomass gasifier is already operational and being used for training, while the 1,000 kW gasifier mini grid is expected to become fully operational by March 2012.

Finally, the following project outcomes and outputs have been achieved. From the onset, the project ensured to take action that are expected to ensure sustainability of the project by promoting active involvement of key partners in and their complete ownership of the project in order to provide techno-commercial and management mechanisms suitable for long-term sustainability of renewable energy based mini-grids in the country.

Other measures to ensure sustainability have been the development of sound business models and making sure that the capacity-building elements are mainstreamed into each activity and output. Finally monitoring, analysis and dissemination of information on power generated by renewable energy sources, as well as skill-upgrading of key stakeholders, including financial institutions, R&D institutions, entrepreneurs and project developers, are all activities that will help to ensure the long-term sustainability of this effort.

As a result of this effort, Zambia and UNIDO are now developing a GEF-5 project to scale-up investments and private sector participation in renewable energy generation in the country.

On a programmatic level, it is essential to highlight the Energy Component of the GEF Strategic Programme for West Africa (SPWA). The GEF SPWA focuses on all West Africa countries including the ECOWAS region and additionally Burundi, Chad and Mauritania—summing up to 18 countries. The initiative aims at taking a programmatic approach to promote renewable energy and energy efficiency projects at the national and regional level in West Africa.

The programme primarily promotes coherence and synergies in the formulation and implementation of practical and action oriented projects. UNIDO has been chosen to be the lead agency responsible for overall coordination of the GEF programme. Moreover, UNIDO has taken the lead in implementing renewable energy based mini-grid projects and, thus, promoting access to clean and renewable energy sources through the implementation of mini-grids in nine countries of the region—Burkina Faso, Chad, Côte d'Ivoire, Cape Verde, Gambia, Guinea, Liberia, Nigeria and Sierra Leone.

Such an approach and focus on practical interventions in the field of renewable energy powered mini-grid systems is seen also as a way to accelerate sustainable energy access and related options for income generation, as well as promote greater private sector involvement. Core technologies considered in individual projects are small hydropower and bioenergy systems. Furthermore, all

UNIDO project activities also aim at mainstreaming renewable energy policies and support mechanisms into regional cooperation frameworks and national development plans and policies.

## Technology transfer (Poznan Strategic Programme on Technology Transfer)

Technology transfer plays an increasingly critical role in the global response to the challenges of climate change. The transfer of environmentally sound technologies (ESTs) is embodied in the very fabric of the UNFCCC. Since the first session of the UNFCCC COP, the GEF has responded to the COP guidance on policies and programme priorities, including those that requested the GEF to finance ESTs.

Most recently the GEF has developed the Poznan Strategic Programme on Technology Transfer, in response to the UNFCCC COP13 guidance which requested the GEF to elaborate a programme for scaling-up investment in technology transfer to help developing countries address their needs for ESTs. The Poznan Strategic Programme on Technology Transfer established the following three windows within the GEF in support of technology transfer:

I. Conduct Technology Needs Assessments (TNAs)

II. Pilot priority technology projects linked to TNAs

III. Disseminate GEF experience and successfully demonstrate ESTs

During the fourth replenishment of the GEF (GEF-4), the Poznan Strategic Programme was provided US$50 million. Under the funding window to finance pilot projects that support the deployment, diffusion, and transfer of technologies that have been identified as national priorities through Technology Needs Assessments (TNAs), National Communications, or other means, the GEF organized a call for proposals for technology transfer pilot projects, which opened on 25 March 2009.

The call for proposals placed emphasis on, among others, consistency of targeted technology with national priorities, innovative technologies and mechanisms for technology transfer, highly leveraged projects, including investments from both the public and the private sector, as well as South-South technology transfer and international collaborative projects. Fourteen proposals were selected out of 39 submissions, covering 16 countries supported by six GEF Agencies. Among those, five out of eight projects submitted by UNIDO were approved in the GEF's November 2009 work programme and are currently under development.

## UNIDO activities under GEF international waters focal area

UNIDO water management unit provides services for transfer of best available ESTs and environmental practices to improve water productivity in industry and prevent discharge of industrial effluents into international waters (rivers, lakes, wetlands and coastal areas) thereby protecting water resources for future generations.

The UNIDO-GEF project portfolio under the international waters focal area helps countries work together to overcome tensions in large water systems. The projects help countries collectively manage their trans-boundary surface water basins, groundwater basins, and coastal and marine systems in order to share the benefits from them. A practical example of such an approach is an ongoing (2009-2013) UNIDO-GEF project "Integrated Assessment and Management of the Gulf of Mexico Large Marine Ecosystem." The GEF financing provided to this project in the amount of US$4,502,500 was able to leverage a co-financing in the amount of US$96,774,780 from Government of Mexico, Government of the United States, and the GEF.

In partnership with the GEF and the Governments of Mexico and the United States, UNIDO initiated a regional project to promote sustainable management of the Gulf's resources with a focus on restoring fisheries and fish stocks and reducing nutrient enrichment to safe ecosystem levels. By removing identified constraints and barriers, developing common mechanisms and tools and promoting reforms and investments the project seeks to create a foundation for an ecosystem-based management.

To date, the project infrastructure has been established. All three demonstration projects are fully underway. The Trans-boundary Diagnostic Analysis (TDA) report has been drafted and is currently discussed. The project had to address the issues related to the oil spill in the Gulf

of Mexico. The UNIDO intervention has triggered a trans-boundary dialogue among the riparian countries.

The project will make an important contribution by providing the needed building blocks, such as information systems and exchange, reinforced capacity and mechanisms for stakeholder participation, an enhanced knowledge of the oceanography of the gulf will assist the countries in addressing uncertainty regarding ocean-atmosphere links. The project will bring together the private sector, civil society representatives and government agencies at all levels and donors interested in supporting work in the region. As the social and economic gains are realized, this will serve to provide an initial incentive to the countries to continue and strengthen their support of the project and to replicate these efforts.

## UNIDO activities under GEF chemicals focal area

UNIDO plays a leading role in the implementation of the Stockholm Convention on POPs. Ever since the Convention opened for signature in 2001, UNIDO has assumed the role of one of the principal agencies assisting developing and economies in transition in meeting their obligations under the Convention. Given the GEF's role of the principal entity entrusted with the operations of the financial mechanism of the Stockholm Convention, UNIDO was able to successfully access the GEF resources to fund chemicals projects in member countries.

UNIDO-GEF POPs portfolio subdivides into two major types of projects: (i) enabling activities for development of National Implementation Plans1 (NIPs) and (ii) Post- NIP projects.

## Enabling activities for development of NIPs

The GEF, as the financial mechanism, and UNIDO, as an implementing agency, assisted developing countries and economies in transition with the enabling activities (EA), meant for the preparation and development of NIPs. An EA project aims at strengthening national capacity and capability to prepare a national plan to fulfill the country's obligations under the Stockholm Convention (Article 7) and transmit its proposed plan to the Conference of the Parties (COP) within two years of the Convention ratification date. UNIDO-GEF EA assistance is country-specific, basing itself on countries' unique institutional, policy and regulatory structures. UNDI-GEF EA projects are structured in accordance with the "Initial Guidelines for Enabling Activities for the Stockholm Convention on POPs" and include such components as:

a) Planning and establishment of coordination mechanism;

b) Establishment of a sustainable national inventory system identifying and quantifying POPs production, use, trade and storage or unintentional emission (Articles 3, 5, 6, 9, 10);

c) Assessment of current institutional, legal and technical capacity in the management and monitoring of POPs;

d) Assessment of socio-economic implications of POPs use and reduction, create awareness of POPs-related risk amongst stakeholders through information exchange and education so as to facilitate the identification and introduction of alternative chemicals (substitutes) (Articles 9, 10);

e) Identification of priority action to be taken in each country; and,

f) Preparation and endorsement for the NIP (Article 7).

## Post-NIPs Activities and Projects

Based on the strategy and action plans outlined in the respective NIPs, UNIDO, with GEF support, assists the developing and economies in transition in implementing their respective obligations under the Stockholm Convention. There are currently 22 UNIDO-GEF supported POPs projects under implementation amounting to US$85 million of GEF grant (listed in the table).

POPs related projects and activities are focused mainly in the following areas: (i) Polychlorierte Biphenyle (PCB) environmental sound management and disposal; (ii) contaminated sites; (iii) pesticides; (iv) Best Available Techniques/Best Environmental Practice (BAT/BEP) projects; and, (v) non-combustion projects.

## PCB environmental sound management and disposal

PCB management and disposal projects aim to create fundamental capacities within government institutions and PCB owners for complying with the PCB-related obligations under the Stockholm Convention. The projects enhance the regulatory and legislative infrastructures and strengthen institutions at national, regional and local level to manage PCB-containing equipment and waste in an environmentally sound manner.

Building capacities in local laboratories for PCB sampling and analysis, transfer of technology know-how for local PCB treatment and elimination, and undertaking inspections at PCB-contaminated sites assures compliance to the PCB-related legislations. Environmentally sound PCB management practices are put in place at PCB-facilities, reducing PCB releases and risks to human and environmental health. Raising targeted public awareness and dissemination of information is a major component of all UNIDO PCBs projects.

According to the NIPs of many countries, the management of PCB remains as one of the priority issues. In response to the need to address these persistent organic pollutants and to assist countries to meet their obligations under the Stockholm Convention, UNIDO has formulated several post-NIP projects focused on the environmentally sound management (ESM) of PCBs.

## Contaminated sites

Article 6 Section 1(e) of the Stockholm Convention states that Parties shall "endeavor to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annex A, B or C." Following this guidance, UNIDO uses GEF funds to help countries develop site selection methodologies, increase local human resources capacity and skills for the selection and handling of remediation technologies based on BAT/BEP, or to remediate contaminated sites in an environmentally sound manner.

UNIDO's GEF-supported project entitled "Regional project to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annexes A, B and/or C of the Stockholm Convention in Nigeria and Ghana" serves as a successful example of the types of achievements that have been promoted through the UNIDO-GEF collaboration in this field. The GEF financing provided to this project in the amount of US$2,650,000 was able to leverage a co-financing from UNIDO, government entities, as well as bilateral aid agencies of US$2.1 million.

The project aims to build capacity in Ghana and Nigeria to develop strategies to identify land/sites contaminated with POPs. More specifically the project works on establishing and enforcing relevant policy and legal frameworks; building capacity in the region to develop a systematic approach for identification of POPs contaminated sites; developing an Information Management System (IMS) and a toolkit on the management of POPs contaminated sites; analyzing samples from POPs contaminated lands; as well as developing environmentally and economically acceptable remediation technologies for POPs contaminated sites based on risk assessment involving all relevant stakeholders.

## Pesticides

Under the umbrella of UNIDO and UNDP the Regional Network on Safe Pesticide Production and Information for Asia and the Pacific (RENPAP) is a network that was established to facilitate the efforts directed towards the elimination of POPs. RENPAP consists of 16 countries (Afghanistan, Bangladesh, China, India, Indonesia, Iran, South Korea, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, Vietnam, and Mongolia).

RENPAP's mission is to protect the environment and provide safety to farmers and workers at production centers, as well as to increase agricultural production through scientific choice and adoption of environmentally friendly technologies and products needed for alleviation of poverty and hunger.

Although the RENPAP is not directly funded by the GEF, the work done as part of this network facilitates the development of UNIDO GEF-funded projects focusing on environmentally sound management (ESM) and disposal of obsolete POPs pesticides.

## BAT/BEP projects and forums

Best Available Techniques (BAT) and Best Environmental Practices (BEP) subsume the activities under the Stockholm Convention to reduce and, if feasible, ultimately eliminate the releases of unintentionally produced POPs. This goal will be achieved by implementing a harmonized framework, in co-operation with institutions and experts from developed as well as developing countries, under principles and requirements of the Stockholm Convention.

In this area one of the GEF-funded projects that UNIDO is preparing is entitled "Introduction of BAT/BEP methodology to demonstrate reduction or elimination of unintentionally produced POPs (U-POPs) releases from the industry in Vietnam". The GEF financing provided to this project in the amount of US$750,000 was able to leverage a co-financing from UNIDO and various government entities in the amount of US$1,590,000. As part of this project, pilot facilities in the pulp and paper, cement, waste incineration, and iron and steel sectors have been selected where BAT/BEP measures have been applied. Apart from generating the global environmental benefits, the project also bears considerable socio-economic benefits.

UNIDO formally launched its first BAT/BEP Forum in East and South East Asia (ESEA) in October 2007, during a Ministerial meeting in Bangkok, Thailand, as a means to promote and create an enabling environment for the development, diffusion, deployment and transfer of existing cost-effective and environmentally sound best available techniques and practices to mainly reduce unintentional releases of POPs from thermal processes such as industrial boilers, metallurgical sectors, and waste incineration.

The ESEA BAT/BEP Forum member countries are Brunei, Cambodia, China, Indonesia, Lao PDR, Malaysia, Mongolia, Philippines, Singapore, South Korea, Thailand and Vietnam. This forum has developed a project proposal as a regionally concerted effort which culminated with the approved GEF project on the demonstration of BAT and BEP in fossil fuel-fired utilities and industrial boilers in response to the obligations under the Stockholm Convention on POPs.

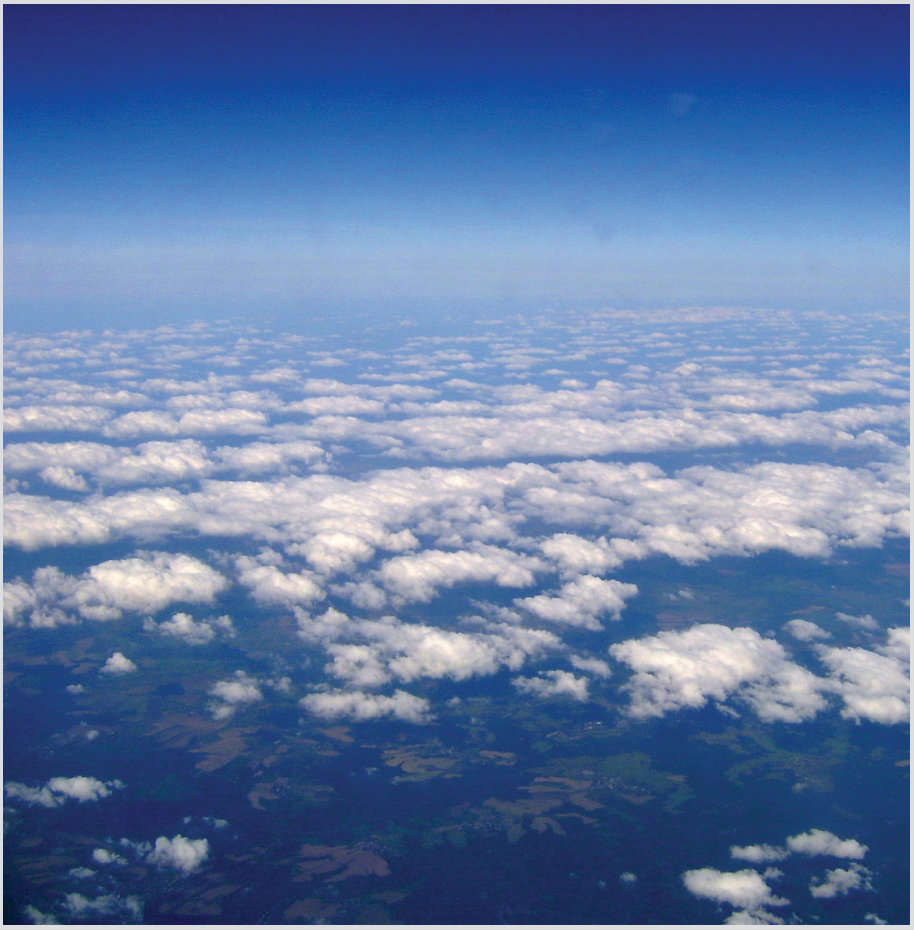
This successful approach has recently been replicated by UNIDO in other parts of the world. The Regional Forum on BAT/BEP in Central and Eastern Europe, Caucasus, and Central Asia (CEECCA) was established in Bucharest, Romania, on 5 November 2009. The member countries of the CEECCA BAT/BEP Forum are Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Czech Republic, the FYR of Macedonia, Georgia, Kyrgyzstan, Republic of Moldova, Republic of Serbia, Republic of Slovakia, Romania, Turkey and Ukraine. The BAT/BEP Forum for Gulf Cooperation Countries (GCC) was launched in October 2010, in Kuwait, and includes Bahrain, Kuwait, Oman, Qatar and the UAE as member countries. The establishment of similar fora in Africa (COMESA, ECOWAS and SADC) happened in September 2011.

## Non-combustion Programme

The GEF financing for PCB projects has leveraged recipient countries' interests in non-combustion technology. The non-combustion technologies available in the market for PCB decontamination could offer technical and financial advantages against combustion options. In addition, these technologies could reduce workers' risks of exposure to PCBs when draining and dismantling transformers that are to be recycled. Although there are still lessons to be learned before the application of these non-combustion technologies could be further replicated, the GEF financing coupled with UNIDO's technical expertise have played a catalytic role in allowing for such technologies to be technologically reviewed and deployed in several recipient countries.

As part of an effort to promote non-combustion technologies the Global Programme established to demonstrate viability and removal of barriers that impede adoption and successful implementation of available, non-combustion technologies for use in the destruction of obsolete POPs stockpiles and wastes reflects the commitment to expand the technological field in the area of POPs disposal.

Examples of UNIDO-GEF projects falling under the Global Programme are the Philippines project, dealing with PCBs, the China initiative, considering ESM and disposal of obsolete pesticides stockpiles and other POPs wastes, and the Slovakia initiative. It is envisioned that certain African countries will also participate in the programme.



## UNIDO-GEF support to African Least Developed Countries (LDCs)

The GEF has strongly supported UNIDO's special programmes for African LDCs, focusing on strengthening institutional capacities for implementing the priority action plans of the NIPs. Through this initiative, UNIDO and UNEP have joined hands in assisting the African LDCs in integrating their Stockholm Convention activities into sub-regional (COMESA, ECOWAS, SADEC) environment and economic development programmes.

## UNIDO activities under Ozone Depleting Substances (ODS)

UNIDO was selected as an implementing agency of the Montreal Protocol (MP) in 1992. The Organization has been working in 87 developing countries. UNIDO implements projects phasing out ODS from annual consumption and production in small and medium sized and large enterprises in the industrial, agricultural and refrigeration-servicing sectors. Most of the UNIDO projects have been financed by the Multilateral Fund, established under the MP to support developing countries (Article 5 countries) in meeting their obligations under the Protocol.

Nonetheless, UNIDO has also developed a project portfolio with the GEF, which has been complementing the work of the Multilateral Fund, by addressing the issue of ODS phase-out in countries with economies in transition (CEITs).

Relying on its comparative advantage and experience in the industrial sector, UNIDO has developed a project approach focusing on innovations and the introduction and widespread application of natural substances as alternatives to man-made ozone-damaging chemicals. These natural substitutes consist of various hydrocarbons, liquid carbon dioxide, water and steam and are environmentally friendly.

Moreover, their climate impact is considerably less than that of many other man-made alternatives. Given such characteristics UNIDO projects have promoted these substances' applications in the refrigeration and foam manufacturing industry, as well as for pest control in some agricultural sectors.

Recognizing the synergies that exists in generating global environmental benefits in various projects, the GEF has actively promoted projects that leverage resources from both the ODS and climate change focal areas—to phase out ODS in industrial sectors and simultaneously achieve climate change benefits by promoting energy efficiency measures. In this respect, UNIDO has been among a few GEF agencies that developed such projects in CEITs.

For instance UNIDO's project proposal in the Russian Federation, entitled "Phase out of HCFCs and Promotion of HFC-free Energy Efficient Refrigeration and Air-conditioning Systems in the Russian Federation through Technology Transfer" represented a first comprehensive effort in the country to consider the entire scope of work required to achieve HCFC phase-out and minimize climate impact taking into consideration both the MP and the Kyoto Protocol mandates, as well as national environmental policies and targets.

This project's primary objective is the direct phase-out of 600 ODP tones of HCFC in the foam and refrigeration manufacturing sectors in the Russian Federation to meet the 2015 MP target. In addition, the direct GHG emission reduction resulting from the phase-out of HCFCs is estimated to be 15.6 MMT CO2. Thus, the integrated approach presented in this project uses the GEF financing from the climate change area, complementing the resources from the OS focal area, to stimulate a secondary intervention around the design of refrigeration and air-conditioning equipment which specifically delivers a step change in the energy efficiency of equipment being produced in the Russian Federation. Hence, the GEF funding allows UNIDO's project to facilitate changes which otherwise would be impossible.

## Cross-cutting issues and multi-focal areas

The GEF focal are strategies are anchored on the potential synergies that could be built amongst various GEF focal areas, with climate change and chemicals (ODS and POPS) as well as international waters and chemicals (Mercury) being the most relevant to UNIDO. UNIDO's policy in project formulation and development, strives to explore this synergy and expand on the opportunities of linking the multilateral environmental agreements (MEAs) in individual projects. Practical highlights of such synergies are provided below.

## Climate change and chemicals (ODS)

A technology transfer project under the GEF Poznan Strategic Programme on Technology Transfer—in the Russian Federation, entitled "Phase out of hydrochlorofluorocarbons (HCFCs) and Promotion of HFC-Free Energy Efficient Refrigeration and Air-Conditioning Systems in the Russian Federation through Technology Transfer" was approved by GEF under its GEF-4 cycle. The GEF financing provided to this project in the amount of US$18 million was able to leverage a co-financing from private and public sectors in the amount of US$40 million.

The project takes an innovative approach to tackling two major environmental issues by combining the phase out of ozone-depleting substances with the improvement of energy efficiency in the refrigeration and air-conditioning sector, to reduce GHG emissions. This project combines funding from multiple focal areas in the GEF taking advantage of the GEF's position as the financial mechanism of a number of Multilateral Environmental agreements.

The project will phase out 600 metric tons of ozone-depleting HCFCs in the foam and refrigeration and air-conditioning sectors, which will help the biggest country in the world to meet its 2015 targets under the Montreal Protocol. Additionally, HCFCs are strong greenhouse gases, and the will be a direct reduction of greenhouse gas emissions equivalent to 15.6 million tons of CO2 by the implementation of this project

The project goes a step further to improve the climate life-cycle performance or refrigeration and air-conditioning systems manufactured and sold in the Russian Federation by simultaneously providing advanced energy efficiency technology transfer to Russian manufacturers. This additional activity will generate a further reduction in greenhouse gas emissions equivalent to approximately 10 million tons of CO2 over give years, through reduced electrical energy consumption. Furthermore the project has been developed on the basis that Russia wishes to avoid the use of HFCs, which are strong greenhouse gases, as alternatives for HCFCs. The manufacturing of higher energy efficiency appliances will also benefit the end users of the technology by providing lower energy costs through the operation of the new equipment.

This is an extremely important project for the Russian Federation, not only because it aims to fulfill Russia's commitments under the Montreal Protocol but also because it addresses energy efficiency, an area in which the Russian Government has made commitments to achieve challenging national targets. In fact the project is so significant that a special Government session on the subject took place on 22 June 2011.

## Climate change and chemicals (POPs)

The GEF chemical management strategy is anchored on the synergy amongst the various GEF focal areas. UNIDO's policy in project formulation and development, strives to explore this synergy and expand on the opportunities of linking the MEAs in individual projects. In a practical example, the development of a UNIDO-GEF BAT/BEP project focusing on U-POPs in the fossil fuel-fired utilities and industrial boilers explored the identification of potential opportunities for simultaneous reduction of dioxins and carbon dioxide (CO2)—linking the Stockholm Convention and the United Nations Framework Convention on Climate Change.

## International waters and chemicals (Mercury)

Following the GEF's newly developed GEF-5 strategy for mercury, UNIDO and GEF have established a project portfolio focusing on removal of mercury discharge from industrial sources into the atmosphere and waters. The vision of this collaboration is to demonstrate ways of overcoming barriers to the adoption of best practices and pollution prevention measures that limit the mercury contamination of air and trans-boundary waters from artisanal and small-scale gold mining (ASGM).

The long-term objective of these types of projects is to protect air and international waters from mercury pollution emanating from small-scale mining operations. The main tools for reducing the pollution consist in assessing the extent of mercury pollution from current activities, introducing cleaner gold mining and extraction technology that minimize or eliminate mercury releases and developing capacity and regulatory mechanisms that will enable the sector to minimize negative environmental impacts.

UNIDO projects promoting synergies between protection of international waters and elimination of mercury pollution dates back to the late 1990s when UNIDO had started its collaboration with other agencies to develop GEF-funded projects in this area.

In 1997, UNIDO initiated a project entitled the Global Mercury Project. The project development was done with UNDP, acting as the implementing agency, and was done under the GEF's international waters focal area. The project, amounting to a total GEF grant of US$6,806,800, with a total co-financing of US$12,882,000 commenced its implementation in 2002 and planned to address the barriers to the adoption of low mercury techniques in ASGM communities affecting 6 major international water basins in Brazil (Tapajos region), Lao PDR, Indonesia, Sudan (Blue Nile State), Tanzania (Geita), and Zimbabwe.

The long-term objective of this project was to assist a pilot suite of developing countries located in several key transboundary river/lake basins in assessing the extent of pollution from current activities, introduce cleaner gold mining and extraction technology which minimize or eliminate mercury releases and develop capacity and regulatory mechanisms that would enable the sector to minimize negative environmental impacts.

This was to be accompanied by development of monitoring programmes and, in collaboration with participating Governments, development of policies and legislation that would lead to practical and implementable standards for artisanal gold mining.

In order to ensure sustainability of the monitoring programmes, the project aimed to build capacity of local institutions, e.g., local laboratories through training and material support so as to enable them carry out continuous monitoring beyond the project three-year term.

The project also expected to increase knowledge and awareness of miners, government institutions and the public at large, on the environmental impacts associated with the application of the current technology. This was to be enhanced through introduction and demonstration of cleaner and efficient technology that, apart from minimizing negative environmental impacts, would improve earnings, health and safety.

Between 2002 and 2007, the project successfully managed to reduce mercury emissions in the ten project sites and strongly contributed to raising awareness at the international level on the importance of addressing the issue of mercury pollution. The project produced numerous scientific publications, one of which, the "Protocol for Environment and Health Assessments in ASGM" communities is widely used today.

# Joint conferences and global forum activities

Recognizing the significance of the UNIDO-GEF partnership to the Organization, and in view of the expanding UNIDO-GEF project portfolio volume, UNIDO has established a UNIDO-GEF Coordination set-up.

This is responsible for providing portfolio-level support and advisory function on GEF policies and regulations to UNIDO technical teams located both in the field and at UNIDO Headquarters, as well as for representing UNIDO at the GEF Council Meetings, relevant GEF seminars, GEF Extended Constituency Workshops, and regular GEF network and focal area meetings organized by the Secretariat. In addition, the GEF Coordination set-up plays an active role on quality assurance by reviewing and providing feedback on UNIDO-GEF projects in the context of the GEF Peer Review Body.

All of the reviews are done prior to project submission to the GEF Secretariat and rely on the GEF project review criteria. The UNIDO GEF Coordination set-up comprises of a Senior GEF Coordinator and one support staff based at the UNIDO Headquarters in Vienna, as well as of a UNIDO-GEF Liaison Officer, located in Washington, DC. The Managing Director of Programme Development and Technical Cooperation (PTC) is the official UNIDO Focal Point to the GEF Secretariat.

Further to the UNIDO GEF Coordination staff participation in various GEF-organized events, UNIDO technical staff and representatives in the field frequently take an active role in such events. This is specifically the case for the GEF Extended Constituency Workshops (ECWs) which are organized by the GEF Secretariat on a sub-regional level. The GEF ECWs bring together GEF focal points from relevant countries, focal points from the main Conventions (Biodiversity, Desertification, Climate Change and POPs), representatives from civil society and representatives from GEF agencies.

The purpose of these meeting is to keep the invited stakeholders abreast of GEF strategies, policies and procedures and to encourage coordination. The ECWs usually cover a wide range of policy, procedure and implementation issues of GEF programmes and activities.

The ECWs are viewed by UNIDO as good opportunities to conduct bilateral discussions not only with the national delegates, but also with representatives of the GEF Secretariat and the other GEF Agencies. Additionally, UNIDO coordination and technical staff engage in GEF focal areas specific task force meetings on a regular basis as well as in ad-hoc working groups among the GEF Secretariat and GEF Agencies.

In addition to working closely with the GEF Secretariat on an operational level, UNIDO frequently partners with the GEF to organize and engage in various global forum activities. Such events play a pivotal role in further strengthening the UNIDO-GEF partnership, as well as in allowing both entities to share best practice examples and lessons learned, gathered from various UNIDO-GEF projects and initiatives, with national experts, planners, and government representatives.

The GEF-5 replenishment negotiations were a significant factor for UNIDO and various UNIDO officials attended the associated GEF-5 Replenishment and Council Meetings, as well as the Forth Assembly of the GEF, in Punta del Este, Uruguay (24-28 May 2010). At the GEF Assembly, in addition to having an exhibition booth and to organizing a side event with such panellists as the former Minister of Foreign Affairs of Uruguay, the Chief Technical Advisor (CTA) of the UNIDO-GEF Gulf of Mexico project, and the UNIDO Representative in the Russian Federation, the


Monique Barbut, Chief Executive Officer and Chairperson of the Global Environment Facility, speaking at the Vienna Energy Forum in June 2011.

Director-General of UNIDO, Kandeh K. Yumkella, addressed the participants at the Ministerial Meeting. In his statement, Yumkella emphasized the importance of the Organization's Green Industry Initiative, which he mentioned is "at the heart" of UNIDO's collaboration with GEF. Further, the UNIDO Director-General was invited by the GEF CEO to address the GEF Council at its Special Session in Uruguay. In his intervention, the Director-General introduced to the GEF Council the recently launched United Nations report "Energy for a Sustainable Development" prepared by the Secretary-General's Advisory Group on Energy and Climate Change (AGECC), which is chaired by the UNIDO Director-General. For UNIDO the GEF Assembly was a great opportunity to collectively strengthen strategies and actions for protecting the global environment and achieving sustainable development.

In line with the commonly adopted UNIDO and GEF approach of promoting multi-focal area projects which address multiple MEAs, UNIDO, In October 2010, supported an International Professional Development Event on Linking Chemicals, Climate Change, Carbon Markets and Energy Management issues at its Headquarters in Vienna. The GEF Secretariat staff were invited. The event was well attended by member country representatives, as well as UNIDO technical and field staff.

In addition UNIDO took an active role in contributing to the GEF 20th Anniversary Celebrations, which took place in Washington, DC in May 2011. UNIDO not only participated in the coinciding GEF Council meeting, but also prepared a special edition of the UNIDO in Russia magazine dedicated to the 20th Anniversary of the GEF, which, along with other UNIDO-GEF publications and videos, was showcased at the UNIDO information booth during the GEF Gala event.

Most recently, in June 2011, UNIDO collaborated with the Austrian Federal Ministry for European and International Affairs and the International Institute for Applied Systems Analysis (IIASA) on organizing a three-day Vienna Energy Forum (VEF) in Vienna, Austria. The Forum brought together over 1,000 participants, including heads of States, ministers, energy experts, representatives of international and non-governmental organizations, academia, civil society and the private sector. The event was also attended by the GEF CEO, Monique Barbut, who took an active role in contributing to the Forum discussions. In her keynote address the GEF CEO remarked that the core challenge in bringing about an "energy revolution" is ensuring energy access to the poorest of the world, while finding a sustainable low-carbon pathway for all.

In parallel to her attendance of the VEF, the GEF CEO was also invited to deliver opening remarks at the UNIDO Industrial Development Board meeting in June 2011. In addressing the UNIDO member states Barbut stressed the importance to the GEF of the strong project portfolio that UNIDO has developed over the past five years, since it gained direct access to the GEF resources. In closing her speech the CEO emphasized the GEF Secretariat's desire to build even stronger ties with UNIDO, as in her view such a strategic partnership would allow both organizations to jointly boost energy efficiency initiatives, tackle existing barriers to renewable energy technologies, and get a step closer towards achieving universal energy access.

On a more operational level, in March 2011, UNIDO took the initiative to organize a GEF Seminar at its Headquarters in Vienna, Austria aimed at equipping its technical, managerial, and field staff with the latest knowledge on the GEF-5 policies and procedures. This seminar was jointly delivered jointly by GEF Secretariat and UNIDO GEF Coordination unit staff. The Seminar provided UNIDO staff with a great opportunity to interact with the GEF Secretariat colleagues, discuss priority issues, and share lessons and experiences from development and implementation of GEF projects and their integration within national policy frameworks. The event was well attended by the UNIDO project managers, members of internal project review committees, UNIDO Representatives in the field, and the directors of the UNIDO International Technology Centres in China, Italy, and Turkey. It is believed that such joint exercises will have lasting and positive effects on the GEF-5 project programming, design and implementation.

Following the UNIDO GEF Seminar, UNIDO also hosted, in March 2011, at its Headquarters in Vienna a semi-annual meeting of the Scientific and Technical Advisory Panel (STAP) of the GEF, This event was attended not only by the members of the STAP and the GEF Secretariat, but also by the representatives of other GEF Agencies. The organization of this meeting at

UNIDO provided UNIDO staff with an opportunity to discuss directly with the STAP members on issues of relevance to the scientific and technological aspects of the GEF focal areas, in which UNIDO maintains a comparative advantage.

Going forward UNIDO and the GEF are currently collaborating on the organization of joint events and activities during the UNFCCC 17th Conference of the Parties (COP) in Durban, South Africa (November-December 2011). This will be done within the context of the COP17 Greening Initiative, funded by GEF and implemented by UNIDO, which aims to demonstrate the country's strong commitment to reduce greenhouse gas (GHG) emissions and promote renewable energy sources. In the context of COP17, the project will highlight ways for countries to take tangible and early steps to reduce emissions and adapt to climate change, establish a foundation for developing SMEs to introduce innovative technologies for fostering economic development and enhancing competitiveness in South Africa, and help showcase low carbon energy technologies and transportation systems supported by GEF.

It is envisioned that the project will increase the awareness of the COP17 participants and inhabitants of Durban on the activities and achievements of the South Africa—GEF partnership, best practices of South Africa's National Greening Programme, and other ongoing climate-related activities in Durban. Participants will have the opportunity to minimize the ecological footprint of the COP17 event through symbolic acts. A Green Passport will be distributed, information material will be disseminated by trained environmental volunteers and online videos of the South Africa–GEF–UNIDO partnership will be shown in Durban and at COP17.

In addition, the winner SMEs of the project's technology innovation competition will be announced during COP17. COP17 participants will also have the opportunity to ride bicycles that will be available at ten bike stations in close proximity to the venue. This will allow participants to actively contribute to a "green" conference with low carbon emission, while at the same time raising public awareness on green transportation. Finally, solar water heaters will be commissioned and installed at selected health clinics in the eThekwini Municipality and COP17 delegates will be able to support the initiative, which is expected to be extended to more health clinics in rural areas, as a means to offset emissions associated with their participation at COP17.

# Outlook

Natural resource depletion, environmental degradation, climate change, biodiversity loss, pollution of international waters and depletion of the ozone layer continue to threaten the global environment.

At the same time, eradication of poverty; spreading the benefits of globalization and making it work for the poor; and managing the transition to a sustainable, low-carbon path to development, while achieving universal energy access, remain as challenges that need to be addressed if continued progress is to be made towards meeting the Millennium Development Goals (MDGs). Meeting these challenges will remain a major item on the global development agenda and in this respect, new technologies, innovative methodologies, green industries and solid financial mechanisms need to be found for both rural and urban communities.

As economic growth accelerates, particularly in developing countries, the world is consuming natural resources at an unprecedented rate. In countries such as China and India for example, oil consumption has doubled in the past decade. Likewise the newly industrialized countries are struggling to build power generation capacities fast enough to meet the growth in demand. Rising demand for energy and materials is spurring a massive need for investment. The shift to sustainable development policies and practices has proceeded slowly so far. There are still a number of barriers to the deployment and diffusion of environmentally sound technologies and expertise, including a lack of awareness, human intransigence, the absence of appropriate policies and regulatory frameworks, and insufficient investment in the infrastructure needed for new energy technologies.

The key is to enhance the existing international mechanisms for the development and dissemination of technologies, aiming to remove barriers and providing predictable financial resources and other incentives for scaling up investment in environmentally sound technologies around the world, especially in developing countries and countries with economies in transition. It is here where the multilateral system has a central role to play in bringing countries together and building consensus on norms and standards to which all countries can adhere for their common good.

UNIDO has long recognized that environmental issues must be addressed and cleaner production methodologies must be promoted at a systemic level in industrial development. The promotion of resource efficiency and cleaner production requires a perspective and a decision-making process that simultaneously considers both economic value and environmental sustainability. Industry, as the prime manufacturer of goods and services that societies consume, has a critical role to play.

The Green Industry concept focusing on elimination or significant reduction of dependence on hydrocarbon fuels, green house emissions, and toxins is one of the adequate answers that UNIDO has developed and promotes under its global forum and technical cooperation activities. Relying on its technical expertise UNIDO will continue to attend to these global challenges through its programmes and activities in developing countries and economies in transition which cover resource efficient and low-carbon industrial production, promote renewable energy for productive use, and build capacity for the implementation of multilateral environmental agreements and compliance with national commitments to international environmental conventions.

Since these problems concern public goods, public funding must play a key role in addressing them. Public funding is vital, because these problems can only be solved through partnerships with governments, civil society, the private sector, and local communities. The GEF has a

relatively unique position among international funding agencies in that it is a financial mechanism for several multilateral environmental agreements. Therefore, the GEF will continue to provide new and additional grant and concessional funding to meet the agreed incremental costs of measures to achieve global environmental benefits and promote sustainable economic growth.

This mission continues to guide the GEF partnership under GEF-5 (July 2010–June 2014). The overall approach to programming in GEF-5 builds on achievements in the previous phases of the GEF and on the refinements made to the focal area strategies during GEF-4. These strategies, while continuing to address the main objectives of the conventions, are designed to be supportive of the sustainable development needs of recipient countries in their pursuit of the MDGs, particularly goal number 7 on environmental sustainability. In addition, GEF-5 private sector strategy also recognizes the growing importance of public-private partnerships (PPPs) and that involving businesses, governments, and foundations, in supplementing the traditional economic aid model.

Continued UNIDO-GEF partnership will allow both organizations to go on contributing towards resolving the current global environmental challenges through further enhancing resource and energy efficiency, tackling existing barriers to renewable energy technologies, elimination of toxic and harmful substances and achieving universal energy access. It is through such a concerted coordinated effort that a true synergy between sustainable development and clean global environment can be achieved.

# Abbreviations

| | |
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| 3ADI | African Agribusiness and Agro-industries Development Initiative |
| ACP | African, Caribbean and Pacific |
| AfrIPANet | Africa Investment Promotion Agency Network |
| AGECC | Advisory Group on Energy and Climate Change |
| AIDA | Action Plan for the Accelerated Industrial Development of Africa |
| AMC | Programme Approval and Monitoring Committee |
| BAT | best available technique |
| BEP | best environmental practice |
| BPR | business process re-engineering |
| CAMI | Conference of African Ministers of Industry |
| CCA | common country assessment |
| CCS | carbon capture and storage |
| CEB | United Nations System Chief Executives Board for Coordination |
| CEMAC | Economic and Monetary Community of Central Africa |
| COAST | Collaborative Actions for Sustainable Tourism |
| CSR | corporate social responsibility |
| DaO | Delivering as One |
| ECLAC | United Nations Economic Commission for Latin America and the Caribbean |
| ECOWAS | Economic Community of West African States |
| EIF | Enhanced Integrated Framework |
| EPA | economic partnership agreement |
| ERP | enterprise resource planning |
| EU | European Union |
| FAO | Food and Agriculture Organization of the United Nations |
| GEF | Global Environment Facility |
| GMSC | Gender Mainstreaming Steering Committee |
| HACT | Harmonized Approach to Cash Transfer |
| HCFC | hydrochlorofluorocarbon |
| HP | Hewlett-Packard |
| HPMP | HCFC phase-out management plan |
| HPPMG | Harmonized Project and Programme Management Guidelines |
| ICHET | International Centre for Hydrogen Energy Technologies |
| IFAD | International Fund for Agricultural Development |
| ILO | International Labour Organization |
| INEX | International Network for Educational Exchange |
| ISO | International Organization for Standardization |
| ITC | International Trade Centre |
| ITPO | Investment and Technology Promotion Office |
| ITU | International Telecommunication Union |
| LCOR | Leading Change and Organizational Renewal |
| LDC | least developed country |
| LIFE | Learning Initiative for Entrepreneurs |
| MDG | Millennium Development Goal |
| MVA | manufacturing value added |
| NCPC | National Cleaner Production Centre |
| NIP | national implementation plan |
| Norad | Norwegian Agency for Development Cooperation |
| NYDA | National Youth Development Agency |
| ODS | ozone-depleting substances |
| OECD | Organisation for Economic Co-operation and Development |
| OLADE | Latin American Energy Organization |
| PAC | Programme Approval Committee |
| PCBs | polychlorinated biphenyls |
| PCOR | Programme for Change and Organizational Renewal |
| POPs | persistent organic pollutants |
| REACH | Registration, Evaluation, Authorization and Restriction of Chemicals |
| RECP | resource efficient and cleaner production |
| SADC | Southern African Development Community |
| SAICM | Strategic Approach to International Chemical Management |
| SID | Society for International Development |
| SME | small and medium enterprise |
| SPX | Subcontracting and partnership exchange programme |
| STC | Screening and Technical Review Committee |
| StEP | Solving the E-waste Problem |
| TCPR | triennial comprehensive policy review |
| TEST | transfer of environmentally sound technology |
| UEMOA | West African Economic and Monetary Union |
| UNCHAIN | University Chair on Innovation |
| UNCT | United Nations Country Team |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDAF | United Nations Development Assistance Framework |
| UNDAP | United Nations Development Assistance Plan |
| UNDG | United Nations Development Group |
| UNDP | United Nations Development Programme |
| UNECA | United Nations Economic Commission for Africa |
| UNECE | United Nations Economic Commission for Europe |
| UNEP | United Nations Environment Programme |
| UN-HABITAT | United Nations Human Settlements Programme |
| UNIDO | United Nations Industrial Development Organization |
| UNU | United Nations University |
| UNU-MERIT | United Nations University Maastricht Economic and Social Research Institute of Innovation and Technology |
| UNU-WIDER | United Nations University World Institute for Development Economics Research |
| UNWTO | World Tourism Organization |
| VIC | Vienna International Centre |
| WIPO | World Intellectual Property Organization |
| WTO | World Trade Organization |

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