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UNEP'S WORK ON CLIMATE CHANGE

FOREWORD



TIME TO BRIDGE THE EMISSIONS GAP



ACHIM STEINER UN Under-Secretary-General and Executive Director, UNEP

If the world is to decisively combat climate change and spare seven billion people, rising to over nine billion by 2050, then nations across the globe need to significantly and urgently raise their ambitions.

UNEP, working with climate modeling centres world-wide, have for several years chronicled the gap between where emissions are, and where they need to be, by 2020, if the world is to have a chance of keeping a global temperature rise under 2 degrees C this century.

In advance of the UN climate convention meeting in Doha, Qatar, the emissions gap report provides stark analysis underlining that while progress is being made, emissions world-wide are now at least 14 per cent higher than they need to be in just 8 years' time. The findings underline the fact that the development of a comprehensive new climate agreement by 2015 cannot be subject to any delay. UNEP's work with partners is not, however, a message of doom and gloom but one of optimism and encouragement that progress is indeed possible.

Under the theme of 'Bridging Gaps: Are You?' this publication outlines a range of do-able actions, from scaling up and accelerating the deployment of renewable and clean energies to investing in sustainable transportation systems and energy efficient buildings.

Forests and other key ecosystems are also vital to this challenge, assisting to conserve biodiversity, water supplies and generate green jobs in keeping with an inclusive Green Economy.

This publication spotlights how UNEP is supporting the development, transfer and deployment of clean technologies, and facilitates countries' access to climate finance, contributing to build a sustainable future.

Bridging Gaps also speaks to raised ambition in respect to climate adaptation given the reality that even if emissions are dramatically cut by 2020 and beyond, some measure of climate change is now inevitable.

There are many emerging voluntary actions and opportunities which can complement and support the aims and goals of the legally binding process under the UN Framework on Combating Climate Change – fast action on short lived climate pollutants such as black carbon and methane being one promising avenue.

Climate change is among the overarching challenges facing humanity. But it is also an opportunity to propel the transition to a low carbon, resource efficient global economy that can assist in meeting the outcomes of Rio+20 and the Future We Want.



Energy Finance estimates that \$257 billion was invested in renewable energies in 2011 — up 17 per cent over 2010. The latest assessment by UNEP and Bloomberg New







The UNEP Sustainable Buildings and Climate Initiative estimates that Carbon Metric method to reduce building emissions in Cyberjaya. a country like Malaysia is already applying the initiative's Common retrofitting buildings can cut heating and cooling needs in half -





PART I: BRIDGING THE GAP THROUGH CLEAN TECHNOLOGIES



Climate-friendly technologies can help countries both to adapt to the effects of climate change and to reduce greenhouse gas emissions. The widespread diffusion of these technologies depends on the capabilities of developing countries to adapt existing commercial technologies to fit their needs, and on further investment in research and development so that currently noncommercial technologies can be brought to market.

In developing countries, deploying climate-friendly technologies is challenged by the often-limited technological, financial, and institutional capabilities and the lack of available infrastructure. In most cases, barriers to market development, limited access to information and scarce or inadequate government policies and regulations are hindering the uptake of climate-friendly technologies. Therefore, all stakeholders – businesses, financiers, technology providers and users, policymakers – need to be actively involved in the process, in order for the transfer and deployment of low emission and climate resilient technologies to be effective.

This year, the United Nations Environment Programme (UNEP) is publishing its third annual assessment of the Emissions Gap and at the same time presents an analysis of the options to limit or eliminate, reduce or bridge

the Gap; the emission gap is the gap between what science tells us the annual level of global greenhouse gas emissions should not exceed in 2020 (to have realistic policy and technical options for staying with this temperature target up to 2100) and what levels we can expect, if only the current commitments and pledges of developed and developing countries are implemented. The report indicates that over the last three years, the country pledges have not changed significantly, leaving the gap largely unchanged but with less time to put in place the actions necessary to retain a realistic chance of staying within the 2°C target. This year's UNEP Emissions Gap Report furthermore indicates that by postponing action the world is likely not only to be confronted with higher costs, but also with unprecedented policy and technology action requirements.

Despite the enormous challenges, global mitigation action and bridging or even closing the emission gap, is necessary and feasible. It is also possible without jeopardizing key national development goals. UNEP is committed to addressing the challenges of climate change and is already engaged in a number of activities aimed at bridging the gap whilst contributing to national development. In its mitigation programme, UNEP facilitates countries to switch to a low emission development pathways and a green economy by helping them overcome the barriers they face in adopting renewable energy technologies and energy efficiency measures in sectors such as transport, buildings, and manufacturing.

UNEP's work focuses on building technical skills and knowledge about policy options in the clean energy sector and on helping countries develop mechanisms, strategies, and policies that ease the costs and risks that prevent financial institutions investing in new climate change mitigation projects.

UNEP's clean technology activities extend to areas as varied as strengthening the scientific basis for informed decision-making, conducting technology and resource assessments, sharing knowledge about technology and policy options, supporting mitigation planning and policy development, pilot testing promising technology options, facilitating access to finance and working with innovative financing mechanisms, and building readiness to access international funding effectively. UNEP also assists countries in their climate change mitigation planning and reporting obligations under the UNFCCC. The following section highlights some of UNEP's initiatives supported in these areas.

PART I: BRIDGING THE GAP THROUGH CLEAN TECHNOLOGIES PLANNING AND SCALING-UP TECHNOLOGIES





technologies Climate have significant adaptation and mitigation potential. Developing countries need access to advanced climate technologies in order to adapt to the impacts of climate change and to move onto low emission development pathways. There is a need to identify which technology can best be adapted to their local circumstances, as well as to remove barriers preventing the widespread diffusion of climate technologies in national markets. These barriers include high cost, import and export restrictions, inadequate government policies and regulations, and lack of experience and knowledge to operate and maintain these technologies. Hence developing country parties are encouraged to undertake assessments of country specific technology needs and to identify capacity gaps and barriers.

Technology transfer is a complex process involving a broad range of interests. It requires mechanisms that actively engage the multitude of stakeholders involved such as government agencies, businesses, donors, technology institutions, research organizations, and NGOs. Collaborative networks for technology transfer bring together these different actors and contribute to finding solutions to specific technology problems.

THE SOLUTION

UNEP is helping countries in undertaking assessments of country-specific development needs that involve analysis and prioritization of technologies, analysis of potential barriers hindering the uptake of prioritized technologies, and identification of market opportunities at the national level. This work is carried out in collaboration with international and regional organizations and centers of excellence.

UNEP is currently assisting 36 developing countries in performing country-led Technology Needs Assessments (TNAs) to identify technologies and options that are likely to have the highest impact on climate change mitigation and adaptation, given national circumstances. Furthermore, building on the TNAs, UNEP and its partners support the TNA countries in formulating national Technology Action Plans (TAPs) that help remove the barriers to technology transfer by prioritizing technology needs. TAPs enable countries to mainstream technology needs into broader development strategies (such as national and sectoral strategies and related investment plans) and to implement identified technologies.

Also, UNEP technology initiatives include knowledge management components supported by centers of excellence and networks that complement national capacity-building activities. UNEP has developed, in collaboration with national governments and internationally recognized organizations, numerous knowledge platforms and networking initiatives aimed at engaging various stakeholders in sharing knowledge and best practices, disseminating the wide range of available tools, methodologies and approaches to effectively and efficiently foster technology transfer, and encouraging peer-learning activities, synergies and collaboration for technical innovation, technology adaptation, diffusion and deployment.

THE IMPACTS

With UNEP's assistance, 20 countries have completed TNA reports whose results are expected to inform highlevel policy decision and governmental implementation, as well as to establish baselines for specifying national mitigation and adaptation targets. Another eight countries have completed TAPs. UNEP is to date managing 5 regional climate networks in the frame of initiatives in Latin America and the Caribbean (REGATTA project) Southeast Asia (Southeast Asia Network of Climate Change Offices project), Central Asia (Central Asia Climate Change Network project), and the wider Asia Pacific region (Asia Pacific Adaptation Network project, and pilot Climate Technology Network and Finance Center project). The networking of key actors, among them the national Climate Change coordination structures or offices contribute decisively to Climate

Technology innovation, adaptation, diffusion and deployment in those countries.

SUPPORT

Global Environment Facility Trust Funds, national governments of Denmark, Finland, Japan, Norway, Spain and Sweden;

WEBSITE

TNA website: www.tech-action.org SEAN-CC website: www.sean-cc.org REGATTA website: www.cambioclimatico-regatta.org www.climatechange-regatta.org

SUCCESS STORY

In Costa Rica, the TAP will be used to design and structure sectoral Nationally Appropriate Mitigation Action (NAMA) in transport and energy, and to support the country's National Climate Change Strategy. In Indonesia emission reduction measures and technologies identified in the TAP will help define an enabling framework for the development of a domestic solar PV (photovoltaic) panel manufacturing sector.

PART I: BRIDGING THE GAP THROUGH CLEAN TECHNOLOGIES MAKING THE BUILDING SECTOR CLIMATE FRIENDLY





The building sector accounts for up to 30 per cent of global annual greenhouse gas emissions and consumes up to 40 per cent of all energy. It also provides the greatest potential for significantly cutting emissions, at low cost, in both developed and developing countries.

Collectively the building sector is responsible for about 40 per cent of global resource consumption, including 12 per cent of all fresh-water use, and produces up to 40 per cent of our solid waste. The sector is estimated to be worth 10 per cent of global GDP (USD7.5 trillion) and employs 111 million people. With urbanization increasing in the world's most populous countries, building sustainably is essential to achieving climate mitigation and sustainable development.

THE SOLUTION

UNEP launched the Sustainable Buildings and Climate Initiative (SBCI) in 2006 to promote sustainable building and construction practices. The initiative has nearly 50 partners and collaborators representing all segments of the building sector, including contractors and developers, designers and engineers, local and national authorities, real estate companies, Green Building councils, professional associations and other non-governmental organizations. UNEP-SBCI draws on UNEP's capacity to provide a global platform for collective action, utilizing its network and partnerships to develop reports, tools, and methodologies to promote sustainable building policies and practices.

Tools developed by UNEP-SBCI include:

 the Common Carbon Metric (CCM), a protocol for measuring energy consumption and calculating greenhouse gas emissions from building operations that is intended to meet international Measurable, Reportable, and Verifiable (MRV) standards

- the Quick Scan Policy Tool, developed in conjunction with the Central European University as an online platform for policymakers to assess their policy environment and develop policy packages to strengthen sustainable building practices in their jurisdictions.
- "State of Play" reports on sustainable buildings in India, France, several countries in Southeast Asia and more data-intensive "Baseline Emission and Reduction Potential" reports for South Africa and Mexico, with more reports in progress for the United States and Colombia.

THE IMPACTS

The work of UNEP-SBCI, including the initiative's tools and strategies is informing policy-making worldwide. The Common Carbon Metric (CCM) has become the basis for a new international standard to measure the climate impact of building operations currently being developed by the International Organisation for Standardisation (ISO). This effort will result in a better understanding of energy consumption and GHG emissions from buildings, and provide a globally applicable methodology for measurement and reporting.

UNEP has incorporated the CCM in a project proposal to assist governments in Asia to develop Nationally Appropriate Mitigation Actions (NAMA) for the building sector.

SUPPORT

Private sector companies, government and local authorities, non-governmental organizations and research institutions organizations, including the Central European University, the Gulf Organization for Research and Development in Qatar, the Institute for Industrial Sciences at the University of Tokyo, the T.C. Chan Center for Building Simulation and Energy Studies at

SUCCESS STORY

the University of Pennsylvania, and the Center for a Sustainable Built Environment at New York University; Governments of Norway and Finland.

WEBSITE

www.unep.org/sbci



In Malaysia, the Ministry of Energy Green Technology and Water has adopted the CCM tool for the building component of its Low Carbon Cities Framework and Assessment System (LCCF), applying it to buildings in Cyberjaya and with future plans to apply it in four other townships in Malaysia. The CCM assists in establishing a baseline so that the effectiveness of retrofits and policy interventions can be effectively measured.

PART I: BRIDGING THE GAP THROUGH CLEAN TECHNOLOGIES CLEANER CARS WITH THE GLOBAL FUEL ECONOMY INITIATIVE





The global vehicle fleet is set to grow from less than one billion to 2.5 billion or more by 2050. Ninety per cent of this growth is taking place in non-OECD countries. At the same time the average vehicle efficiency of non-OECD countries is getting worse and carbon dioxide (CO_2) emissions per vehicle are increasing. Even though vehicles in OECD countries are, in contrast getting more efficient, CO_2 emissions of the global fleet are increasing and are set to increase even more sharply in the years to come.

Improving fuel economy has many co-benefits for human health, the natural environment and the economy. These include the reduction of black carbon emissions and the subsequent improvement of urban air quality, a reduction in a country's dependence on oil and cheaper transport for consumers.

Many countries have put policies in place that promote cleaner and more efficient vehicles and have adopted ambitious long-term targets. Cost effective cleaner technologies such as smaller engines (with more power), lighter cars and low resistance tyres have improved vehicle efficiency. Hybrid, plug-in hybrid and electric vehicles are now entering many markets.

The policies that have been successful are a mix of fiscal measures (taxes for polluting cars and tax breaks for cleaner cars), communication (such as labeling showing the efficiency of the car) and standards (for example restricting the importation of used vehicles). Regrettably very few developing countries and economies in transition have put in place these policies and thus there is an urgent need to transfer knowledge and technologies in this area.

THE SOLUTION

UNEP, the FIA Foundation, the International Transport Forum, the International Energy Agency and the International Council for Clean Transportation launched the Global Fuel Economy Initiative (GFEI) in 2008. The GFEI promotes and supports automotive fuel economy aiming at a doubling of automotive fuel economy by 2050 (roughly going from 8I/100 km to 4I/100 km). The GFEI has started promoting the issue of fuel efficiency globally and is supporting more than 20 countries around the world in establishing policies.

THE IMPACTS

Over the coming decades over US\$400 trillion is expected to be invested in fuels and vehicles. By putting in place fuel economy policies in all countries, more than a gigatonne of CO_2 emissions per year can be avoided by 2030 and over two gigatonnes by 2050. By saving six billion barrels of oil per year in 2050, with an oil price of US\$125/ barrel this would come close to US\$800 billion.

Over the past years the GFEI has started 13 country projects. For example in Kenya UNEP has established the fuel efficiency baseline of the existing fleet, allowing the government to develop fuel economy strategies. In Ethiopia UNEP is working with the Government to develop fuel economy policies. In Chile, the Congress just adopted new labeling requirements showing the fuel efficiency of vehicles. The GFEI is in talks with another 18 countries that are keen to also develop national automotive fuel economy policies.

SUPPORT

Five GFEI partners; EU and Global Environment Facility Trust Funds; Experts and representatives from oil and vehicles industry; NGOs.

WEBSITE

www.globalfueleconomy.org

Making vehicles cleaner & more fuel efficient

Goal of the Global Fael Economy Instative (GFE): Contribute to significant reductors of greenhouse gas ensuitors and oil use through improving the average fael economy across the global light duty vehicle feet



CARACTERS STREET, CONTRACTOR STREET, CONTRACT

SUCCESS STORY

In Chile, transport is one of the most rapidly growing end-use energy sectors, and emits about one-third of Chile's energy related GHG emissions. In the context of the GFEI initiative, the Congress just adopted new labeling requirements showing the fuel efficiency of vehicles. With UNEP's support, Chile is also preparing a system of incentives for low emission and fuel efficient vehicles, and disincentives for inefficient vehicles to promote a vehicle fleet transformation towards more efficient vehicles that present less local and global pollutant emissions. It is estimated that the incentive and disincentive system will imply a 5 per cent reduction of CO_2 emissions from the total national vehicle fleet in 2014, obtaining a total CO₂ reduction of 2.15 million tons in 5 years.

PART I: BRIDGING THE GAP THROUGH CLEAN TECHNOLOGIES

PHASE-OUT OF OZONE-DEPLETING GAS IN DEVELOPING NATIONS





Many ozone-depleting substances (ODS) and the fluorocarbon gases used to replace them (such as hydrofluorocarbons (HFCs) are potent greenhouse gases and are between 90 to 12,200 times more powerful than CO₂ in causing climate change.

In 2007, the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer decided to accelerate the phaseout of hyrochlorofluorocarbons (HCFCs), which are mainly used in the air-conditioning and refrigeration sectors and in the manufacture of foam. Because of their lower ozone depletion potential, HCFCs were promoted as transitional replacements for chlorofluorocarbons (CFCs) to enable the latter gases to be quickly phased-out.

This accelerated phase-out of HCFCs presents developing countries with an unprecedented opportunity to adopt ozone and climate-friendly technologies and policies. However, achieving these potential climate benefits depends on the replacement technologies adopted and can only be attained if low – or zero – energy efficient alternatives are selected. Together with improved servicing practices, these actions will reduce direct and indirect emissions through increased energy efficiency.

THE SOLUTION

UNEP, through its OzonAction Programme, is assisting key stakeholders in developing countries make informed decisions about technologies and policies to replace HCFCs, with a particular emphasis on achieving additional environmental and climate benefits. Around 100 countries are being helped by OzonAction to prepare and implement HCFC phaseout management plans with a focus on: establishing accurate and comprehensive baseline data; creating awareness about technology options and co-benefits with climate; developing and implementing legislation and standards; and enforcing trade controls. These plans encourage the adoption of low to zero GWP energy efficient alternatives.

OzonAction is also working with governments and the private sector to address rapidly growing HFC emissions through the Climate and Clean Air Coalition (CCAC).

THE IMPACTS

The Intergovernmental Panel on Climate Change (IPCC) and the Montreal Protocol's Technology and Economic Assessment Panel (TEAP) estimated in a joint study that the climate benefits of phasing-out HCFCs would be equivalent to about 18 billion tonnes of carbon dioxide over the 2015-2050 period. If we consider further possible benefits due to improved energy efficiency of equipment using HCFC alternatives and recovery and destruction of old equipment, the emission reductions could be equivalent to about 38 billion tonnes of carbon dioxide over the same period.

Overall the actions under the Montreal Protocol in phasing-out ozone depleting substances have had significant impact. Since 1990 these have had the additional benefit of reducing greenhouse gas emissions by about the equivalent of 11 billion tonnes of carbon dioxide per year – five to six times the reduction target of the Kyoto Protocol between 2008 and 2012.

SUPPORT

The OzonAction Programme is funded by the Multilateral Fund for the Implementation of the Montreal Protocol.

WEBSITE

www.unep.org/ozonaction/



SUCCESS STORY

UNEP, as the lead implementing agency for the HCFCs phase-out in the Maldives, is supporting the country to achieve a complete phase-out of HCFCs by 2020, ten years ahead of schedule. The country is determined to lead the race in carbon neutrality and HCFC phase-out is a part of this goal.

PART I: BRIDGING THE GAP THROUGH CLEAN TECHNOLOGIES

MAKING THE SWITCH TO EFFICIENT LIGHTING



THE PROBLEM

Lighting from electricity accounts for nearly 20 per cent of global energy consumption and six per cent of worldwide greenhouse gas emissions (GHG). Unless policies are implemented immediately to address this issue, overall energy consumption for lighting will have grown by 60 per cent by 2030 with dramatic consequences for climate change. The phase-out of inefficient incandescent lamps provides one of the most cost-effective way to reduce carbon emissions.

THE SOLUTION

The UNEP "en.lighten" initiative supports countries in implementing policies and concrete measures that will accelerate market transformation to efficient lighting technologies. A target date for the global phase-out of all inefficient lighting has been set for the end of 2016.

In order to mobilize efforts to make the global transition to efficient lighting a reality, UNEP has convened government representatives and international lighting experts from over 40 organizations representing 30 countries, to provide guidance on the development and implementation of successful national efficient lighting strategies.

THE IMPACTS

The replacement of all inefficient lighting in the world would cut global electricity consumption by five per cent, as much electricity as that consumed by India and Mexico combined. This global effort would yield annual initial cost savings of US\$110 billion and would also achieve annual carbon dioxide reductions of 490 metric tons, equivalent to the combined annual carbon dioxide emissions of Italy and Denmark or to the emissions produced by more than 122 million cars.

As part of the en.lighten initiative, UNEP has published the findings of 150 country lighting assessments and a new global policy map on efficient lighting. The Country Lighting Assessments highlight the energy, financial and CO_2 savings potential of efficient lighting. It also published the global policy map for efficient lighting that provides an overview of efficient lighting policies and successes, specifically in the residential sector.

SUPPORT

en.lighten initiative is a proven example of a successful public private partnership. It was created between UNEP and OSRAM AG, Philips Lighting and the National Lighting Test Centre of China, with the support of the Global Environment Facility.

WEBSITE

www.enlighten-initiative.org

SUCCESS STORY

Lighting in Chile accounts for 12 per cent of total electricity consumption. The en.lighten initiative is working with Chile to develop a National Efficient Lighting Strategy that will save US\$485 million annually in reduced electricity bills; electricity savings equivalent to the output of four mid-sized power plants; and reduced carbon emissions equivalent to taking 300,000 cars off the road. As a result of this partnership, Chile will also establish appropriate legislation and a collection and recycling system for spent lamps that may contain mercury.

GREENING THE GAP THROUGH CLEAN TECHNOLOGIES





THE PROBLEM

Tea is the second most consumed beverage in the world, after water, with an estimated 18 to 20 billion cups of tea consumed every day. Tea production in the East African Region, which contributes 28 per cent of the world market supply, is carried out in highland areas characterized by high annual rainfalls and all-season river flows. Despite these favourable conditions, optimal tea production in the industry has been hampered by unreliable, insufficient and expensive energy from the national grid system as well as by a lack of supply in remote areas. The processing of tea, which requires both electrical and thermal energy, has made it necessary for all tea factories to install backup diesel generators that are highly polluting and greenhouse gas emitting.

THE SOLUTION

UNEP launched the "Greening The Tea Industry in East Africa" (GTIE) project in 2007 to address the energy challenges facing the tea companies by transferring renewable energy technologies and knowledge to the players in the sector. The overall project aims at installing six small hydropower plants (SHP) with a cumulative capacity of 10 MW that will generate 105,000 MWh by project end. 84,000 tons of CO₂ equivalent are expected to be mitigated over the project duration and to increase to an estimated 765,000 tons over a 20 year period. UNEP established the suitability of SHP within tea estates in the countries covered by the East African Tea Trade Association and embarked on installing electricity-generating stations.

The increase in the supply and reliability of electricity to tea factories reduces the industry's energy and production costs and ultimately increase their competitiveness in the world market. Greenhouse gases from tea factories are also reduced through green power generation. Moreover, rural electrification is enhanced through power wheeling technologies – thereby improving the livelihoods of surrounding communities.

THE IMPACTS

The GTIE project has made commendable progress on the implementation of SHP in selected countries. Kenya's successful implementation of a 0.85 megawatt SHP is now fully operational while construction of two additional hydropower plants capable of generating 10 megawatts will commence following the completion of technical design plans. Rwanda's construction of a 4 megawatt station is ongoing; Tanzania will embark on constructing 1.5 megawatt SHP in Suma once sufficient funds have been mobilized. Similarly, Uganda's construction of a 1.97 megawatt SHP will begin upon identification of a suitable developer.

The project is also working with various regulatory authorities to improve the policy and operating environment, which in turn has fostered public/private partnerships in the hydropower implementation process. Progressive implementation of electricity generating stations has not only spurred interest amongst in other tea companies in investing in small hydropower but has also resulted in financial institutions developing financial products to facilitate loans to the renewable energy sector.

SUPPORT

Global Environmental Facility trust funds; African Development Bank; East African Tea Trade Association; Tea Development Agencies in Kenya Malawi, Rwanda, Tanzania and Uganda.

WEBSITES:

http://greeningtea.unep.org, www.eatta.com



"Tea is known to be good for you, now it is also getting better for the environment." Achim Steiner,

UN Under-Secretary General and UNEP Executive Director

SUCCESS STORY

One of the success stories of the GTIE project was the commissioning of the 0.85 megawatt Tagabi small hydropower station in May 2011. The fully operational plant in Kericho, Kenya has to date saved the tea company an estimated US\$613,833 and generated 6,445,277 kilowatt-hours. Further energy savings and earnings through feed-in tariffs will continue to be recorded at the station and subsequent SHP's once operational.



ACTION FAST

IOR HTRO

on short-lived climate pollutants could slow the projected warming in the Arctic by about 0.7°C by 2040.

PART II: BRIDGING THE GAP AND PROMOTING SUSTAINABLE DEVELOPMENT





Climate change will have an adverse effect on communities, economic sectors and infrastructure, and thus can undermine sustainable development. The recent Rio+20 Conference emphasized that "the scale and gravity of the negative impacts of climate change undermine the ability of all countries, in particular developing countries, to achieve sustainable development".

There are a number of initiatives and partnerships currently being implemented in developing countries, with a focus on reducing emissions and increasing resilience for sustainable development. These initiatives include access to sustainable energy, and reducing short lived climate pollutants (i.e. black carbon, methane and some hydrofluorocarbons – HFCs). Energy plays a critical role in the development process and delegates at the Rio+20 Conference reaffirmed support for the implementation of policies and strategies, based on national circumstances and development aspirations using an appropriate energy mix, including increased use of renewable energy sources and other low-emission technologies, and more efficient energy use.

In Africa the potential of wind power alone is more than 1,000 gigawatts, or more than five times the continent's current total installed generating capacity. The potential output of solar energy is in excess of 10,000 GW, while only 5% of the region's estimated hydropower resources have so far been exploited. Harnessing these available energy sources would not only help reduce emissions but also provide energy to spur local industries and increase access to sustainable energy.

In response to the global challenge of access to sustainable energy the UN-Secretary General initiated

the "Sustainable Energy for All" partnership which brings together governments, the private sector, civil society, the UN and other international agencies. UNEP is committed to supporting the implementation of this initiative that aims to provide access to modern energy services; improve energy efficiency and contribute to sustainable development.

Reducing black-carbon can contribute to sustainable development goals such as improved health, cleaner air food and water security. In many developing countries energy for cooking is still mostly derived from inefficient traditional biomass such as firewood. Cooking with firewood emits black carbon which has a warming impact on climate and is a primary component of air pollution. UNEP together with partners initiated low-cost, high impact interventions to reduce black carbon emissions. Examples of these and other initiatives are detailed in the section below.



PART II: BRIDGING THE GAP AND PROMOTING SUSTAINABLE DEVELOPMENT

CLIMATE AND CLEAN AIR COALITION TO REDUCE : SHORT-LIVED CLIMATE POLLUTANTS



THE PROBLEM

Short-lived climate pollutants (SLCPs) are agents that have relatively short lifetime in the atmosphere – a few days to a few decades – and a warming influence on climate. These short-lived climate pollutants are also dangerous air pollutants, responsible for various detrimental impacts on human health, agriculture and ecosystems.

Key SLCPs, including methane, black carbon, tropospheric ozone, and many hydrofluorocarbons, are responsible for a substantial fraction of near term climate change, with a particularly large impact in sensitive regions of the world. Science has built a powerful case for action to reduce SLCPs. A UNEP 2011 report shows that fast action to reduce these pollutants could slow down the warming expected by 2050 by as much as 0.5°C. It is estimated this would prevent over two million premature deaths annually and avoid annual crop losses of over 30 million tons. While fast action to mitigate SLCPs could help slow the rate of global warming and avoid exceeding the 2°C target in the near-term, long-term climate protection will only be possible if deep and sustained cuts in carbon dioxide emissions are made quickly.

THE SOLUTION

In February 2012, UNEP together with the governments of Bangladesh, Canada, Ghana, Mexico, Sweden and the United States, launched the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC): the first global effort to treat SLCPs as an urgent and collective challenge.

Through this voluntary effort, governments, intergovernmental organizations, NGOs and civil society are working together to accelerate and scale-up action, catalyze new actions as well as highlight and bolster existing efforts to address SLCPs. All CCAC Partners, which now number over thirty, recognize that the work of the Coalition is complementary to global action to reduce carbon dioxide, in particular efforts under the UNFCCC.

THE IMPACTS

The CCAC Partners have identified seven initiatives for rapid implementation by the Coalition that will ensure fast delivery of scaled-up climate and clean air benefits, including: Reducing Black Carbon Emissions from Heavy Duty Diesel Vehicles and Engines; Mitigating Black Carbon and Other Pollutants from Brick Production; Mitigating SLCPs from the Municipal Solid Waste Sector; Promoting HFC Alternative Technology and Standards; Accelerating Methane and Black Carbon Reductions from Oil and Natural Gas Production; Promoting SLCP National Action Planning (NAPs); and Financing Mitigation of SLCPs. First actions under these initiatives are underway, with the first results expected in March 2013.

SUPPORT

The Coalition is growing rapidly. As of November 2012, it had 36 Partners. Financial support for the Coalition comes from Canada, Germany, the European Commission, Norway, Sweden and the United States of America.

WEBSITE

www.unep.org/ccac



SUCCESS STORY

Mitigating black carbon from brick production

The CCAC identified traditional brick production as an area where substantial emissions reductions can be achieved for black carbon, toxics and other pollutants. Recent studies show that implementing more efficient technologies can result in reductions in pollutant emissions of 10 – 50 per cent, depending on the process, scale and fuel used.

In a pilot phase to be completed by March 2013, the Coalition is focusing on raising the profile of emissions of SLCPs from inefficient brick production on national governments' agendas to catalyze political engagement and action. Public policies to reduce the environmental impacts of artisanal brick production will be examined, and the characteristics of current brick production will be determined for Africa, Asia, and Latin America, covering the technology, fuels, practices and socio-economic conditions.

PART II: BRIDGING THE GAP AND PROMOTING SUSTAINABLE DEVELOPMENT SUSTAINABLE ENERGY FOR ALL





THE PROBLEM

Nearly one in five people around the world do not have access to modern energy services. Three billion people, mainly in poor countries, rely on traditional biomass such as wood, coal, charcoal or animal waste for cooking and heating, usually with negative impacts on human health and the natural environment.

In industrialized countries the problem is one of waste, not shortage, due to inefficient energy use. The world currently invests more than one trillion dollars per year in energy, much of it going toward fossil-based energy systems. This excessive dependence on fossil fuel based energy contributes significantly to global warming and climate change. Climate change puts us all at risk, but the poor are the first and worst affected and it is a major barrier to poverty alleviation, in particular for women and local communities.

THE SOLUTION

Secretary-General Ban Ki-moon launched the Sustainable Energy for All Initiative, (SE4ALL) to mobilize action from all sectors of society in support of three interlinked objectives to be achieved by 2030: providing universal access to modern energy services; doubling the global rate of improvement in energy efficiency; and doubling the share of renewable energy in the global energy mix.

The UN General Assembly declared 2012 the International Year of Sustainable Energy for All, to promote access to modern affordable energy services in developing countries. As part of the year's activities, Secretary-General Ban Ki-moon is calling on governments, businesses and civil society to commit to taking concrete actions that will help achieve sustainable energy for all by 2030. These actions will provide significant benefits for all, including strengthened economic growth, expanded social equity and a cleaner environment. UNEP is actively engaged in two of the 11 action areas identified by SE4ALL – efficient lighting and vehicle fuel efficiency – by registering commitments to promote efficient lighting in 44 developing countries, and to develop efficiency standards for alternative fuel vehicles.

UNEP hosted the Africa roll-out of the International Year of SE4All in February 2012 to examine how to achieve the objectives of SE4ALL, and is linking its sustainable energy activities to the initiative.

UNEP is also contributing, together with the Renewable Energy Policy Network for the 21st Century (REN2I), to the development of the renewable energy component of the SE4ALL Baseline Report, which will be published in January 2013. This report will enable the tracking of progress, of unrealised potential and of what remains to be done to attain the three objectives.

THE IMPACTS

Thanks to the strong leadership from the Secretary-General and active support by governments, significant momentum continues to build around the initiative:

• More than 50 developing countries are now working with the initiative, with more coming on board

- More than US\$50 billion has been mobilized from the private sector and investors
- Tens of billions of dollars have been committed by multi-lateral development banks in Asia, Europe and Latin America
- Hundreds of actions and commitments have been catalyzed in support the three core objectives, with commitments to support energy access providing more than one billion people with access to modern energy during the lifespan of the initiative.

WEBSITES

www.sustainableenergyforall.org/ www.unep.org/energy/



Ban Ki-Moon,

UN Secretary General









THE ROAD SHARE

of cutting air pollution causing 1.3 million premature deaths a year, UNEP is spearheading planning by cities and countries for bicycles. walking and other non-motorized transport systems with the aim and reducing a similar number killed in road accidents.







AGE R . .

hectares of degraded forest lands with the potential to cut global emissions and generate up to \$85 billion a year UNEP is supporting global efforts to restore 150 million in economic services for rural communities.



PART III: BRIDGING THE GAP BY INVESTING IN ECOSYSTEMS





Scientific knowledge on the implications of climate change is compelling, with increasing evidence that even stabilizing global average temperatures at 2°C above preindustrial levels may still significantly change the climate patterns as we know them. The earth has warmed by approximately 0.8°C on average from preindustrial times, and high-latitude regions are already experiencing changes in weather patterns. Further impacts will be unavoidable as warming continues. A 2°C global average temperature increase is likely to lead to more frequent and stronger extreme weather events, increased variability which may for example lead to water stress in many world regions, risk of declining food production in many tropical regions, and damaged ecosystems, including widespread loss of coral reefs, all of which exacerbates existing development challenges around the world.

Investing in healthy, well-functioning ecosystems can help to reduce emissions related to the loss and degradation of ecosystems, build resilience to adverse impacts of climate change, and reduce human and ecosystem vulnerability. Enabling a strong natural resource base offers therefore a valuable approach for both climate change mitigation and adaptation. The conservation, restoration and sustainable management of ecosystems are key approaches UNEP employs for bridging the emissions gap and for enabling adaptation.

Forests are a prime example of ecosystems with multiple benefits for the mitigation of climate change, promoting sustainable development, conservation of biodiversity and contributing to national economies. Yet despite the well documented benefits of forests, they continue to be degraded and destroyed at alarming rates. Investing in forest ecosystems is vital to reducing the loss of forests, retaining important ecosystem goods and services, and to reducing the emissions which occur when forests are converted into other land uses. REDD+, adopted by parties of the UNFCCC in 2007 provides a significant opportunity for climate change mitigation, by directing much needed funding to countries for the conservation of forests. REDD+ is a key approach for the conservation and sustainable management of forests that contributes to the urgent need for emissions reductions. UN support to countries on this process is provided through the UN-REDD Programme, a collaborative partnership of FAO, UNDP and UNEP.

While REDD+ and UNEP's other mitigation efforts address the emissions gap, there is also an urgent need to decrease the gap between the capacity needed for adapting to climate change, and communities' current capability to cope with climate change impacts. Ecosystem-Based Adaptation (EBA) approaches involve the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help communities and ecosystems adapt. EBA approaches use ecosystem-based natural resource management to improve the resilience of ecosystems and to sustain peoples' livelihoods. They are accessible to local communities and relatively small investments are required compared to the social, economic and environmental benefits generated. UNEP focuses on incorporating EBA approaches as an integral part of an adaptation strategy, from the development of tools and methods, to assessments, adaptation planning, implementation, sharing knowledge, and facilitating access to finance.

TROPICAL FOREST PROTECTION MAKES CLIMATE SENSE





THE PROBLEM

Deforestation and forest degradation account for between 15 and 17 per cent of global greenhouse gas emissions – making it the second biggest contributor to the build-up of greenhouse gases after the energy sector. However, reducing emissions requires large investments in conservation, sustainable management and the restoration of tropical forests. UNEP's Green Economy Report estimates that US\$40 billion dollars annually will be needed to halve the deforestation rate, and these resources need to be invested strategically.

THE SOLUTION

Reducing Emissions from Deforestation and Forest Degradation (REDD), aims at creating financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. REDD+ goes beyond deforestation, and includes the roles of conservation, sustainable management of forests and the enhancement of forest carbon stocks. The UN-REDD Programme was launched in 2008 and builds on the convening role and technical expertise of FAO, UNDP and UNEP.

Although initiated primarily for mitigation purposes, REDD+ holds the promise of multiple benefits for climate, development and conservation in the forest sector at national and global levels. The UN-REDD Programme works with countries to extract benefits from forests through support to national REDD+ programmes, capacity building and technical support. There is also a significant potential for strategies to go beyond reducing deforestation alone and contribute to the larger goals of increasing sustainable development and building the green economy. UNEP is working to identify the types of intervention that add value to the economy, increase revenue, and provide new livelihood opportunities while conserving forests and reducing emissions.

THE IMPACTS

The Programme supports national REDD+ readiness efforts in 44 partner countries, spanning Africa, Asia-Pacific and Latin America and covering 56 per cent of the world's tropical forests. Currently, 16 of those countries have approved National Programmes with activities structured to facilitate the REDD+ readiness process in those countries. In addition, the UN-REDD Programme provides targeted support to partner countries upon request for specific activities related to readiness including stakeholder engagement; support to a national approach to safeguards; Measurement, Reporting and Verification; and pursuing investment options. The Programme has allocated over US\$118 million dollars in support of REDD+ Readiness in partner countries.

SUPPORT

Donors: Denmark, Japan, Norway, Spain Participating UN Organizations: FAO, UNDP, UNEP

WEBSITE

www.un-redd.org

SUCCESS STORY

The Government of Indonesia (GoI), with a range of partners including UNEP and the UN-REDD programme, is exploring how REDD+ investments can leverage sustainable change in Central Kalimantan's vast forested landscapes, so that green development with sustainable, equitable job creation can go hand in hand with climate, conservation and development objectives.

Initial scenarios have been developed that show that a green development pathway, which involves some modification in the way oil palm expansion takes place, can outperform 'business-as-usual' in terms of GDP growth rates for the region by as much as 6 per cent, with even greater benefits for the 'GDP of the Poor'. While these first results will need to be subjected to rigorous peer-review and broad consultation, they provide a scenario for development and economic growth coupled with necessary emissions reductions.



HELPING COMMUNITIES AND ECOSYSTEMS TO CLIMATE CHANGE





THE PROBLEM

Along with addressing the emissions gap to reduce the rate of temperature change and climate change impacts, there is also an urgent need to decrease the adaptation gap and to reduce the vulnerability of people and ecosystems to the effects of climate change.

International efforts to support adaptation have been increasing in the past years, but several challenges remain when attempting to up-scale adaptation efforts in developing countries. Barriers include limited access to financing, capacity, and knowledge to support adaptation planning and action.

THE SOLUTION

To meet this challenge, UNEP helps build capacity among governments and communities for planning and implementing adaptation actions. UNEP's approach towards building climate resilience focuses on a range of support services

These services include:

- Supporting research, pilot projects, and other activities that demonstrate how vulnerability to climate change can be reduced through Ecosystem-Based Adaptation (EBA) approaches, which can also contribute to closing the emissions gap through carbon sequestration
- Strengthening the ability of countries to undertake vulnerability and impact assessments
- Providing countries with knowledge, tools, and policy support for adaptation decision-making, planning and implementation
- Improving access to adaptation finance and supporting finance readiness, particularly among Least Developed Countries

THE IMPACTS

Ecosystem-Based Adaptation is a key approach and focus area of UNEP's overall adaptation portfolio. In this regard, UNEP is working closely with the governments of Nepal, Peru and Uganda to demonstrate EBA in mountain ecosystems and to incorporate EBA in adaptation plans. Implementation of a project on coastal ecosystems in selected Small Island States supported by the European Commission (EC) will begin in 2013. Exchanges of adaptation knowledge, good practices and capacity building through climate change networks are progressing well in Asia Pacific, Latin America and West Asia, with a focus on vulnerability and impact assessments, training and knowledge-sharing workshops, and development of online knowledge management tools.

UNEP is supporting countries to design and implement adaptation projects (with a focus on EBA), under the Global Environment Facility, the Least Developed Countries Fund and the Adaptation Fund. Implementation has now started for Adaptation Fund projects in Tanzania, Madagascar and Cambodia. UNEP also recently supported Paraguay to develop an Adaptation Fund proposal.

SUPPORT

Key donors (selected): Germany, Spain, Norway, Sweden, Japan, EC, Least Developed Countries Fund (LDCF) Special Climate Change Fund (SCCF), Adaptation Fund. Key partners (selected): International Union for Conservation of Nature, United Nations Development Programme.

WEBSITE

www.unep.org/climatechange/adaptation

SUCCESS STORY

UNEP is collaborating with UNDP and IUCN with the support of the German ministry of environment on a joint programme to implement EBA approaches in mountain ecosystems in Nepal, Peru and Uganda. Countries are supported in maintaining and restoring the functioning of ecosystems to provide adaptation services, and in strengthening in-country capacity to implement adaptation actions. Local communities, national government agencies and other actors are closely in involved in the implementation through action-learning and capacity building activities.

UNEP-supported LDCF adaptation projects are starting to deliver results on the ground, for example in Djibouti, where mangroves have been rehabilitated to reduce coastal erosion and floods from sea level rise.

In order to assist national planners and decision-makers select, design, implement and track EBA approaches as part of a wider adaptation strategy, UNEP together with partners has developed a new 'EBA Decision Support Framework' (EBA-DSF) draft guidance document. The EBA-DSF centers around four iterative steps and strategic considerations: Setting Adaptive Context – Selecting Appropriate Adaptation Options – Design for Change – Adaptive Implementation. The EBA-DSF is being transformed into a capacity building platform to support the implementation of National Adaptation Programmes of Actions and other adaptation actions. Next steps include the pilot testing and refinement of the framework, as well as the development of practical modules for monitoring & evaluation and community-based adaptation, ecosystem-specific modules, and related training packages.



national government policies to assist in halving the CO₁ emissions of the global fleet which is set to triple from 700 million vehicles today to around 2.5 billion by 2050. UNEP is supporting the Global Fuel Economy Initiative to catalyze

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US\$6 million from UNEP's Seed Capital Assistance Facility is leveraging \$500 million from the private sector for renewable energy projects in developing countries.

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PART IV: BRIDGING THE FINANCE GAP





Addressing climate change requires significant financial investments. According to multiple sources, overall needs for adaptation and mitigation have been estimated to total between US\$180 and US\$300 billion annually by 2020. At the climate talks in Copenhagen in 2009, developed country governments' committed to mobilising US\$100billion a year of climate funding by 2020 from both public and private sources.

There remains a huge gap between climate funding needs in developing countries and available funds. However, investment flows in the clean energy sector show that on a global level, investments in green energy are growing at a significant rate: increasing to US\$211 billion in 2010. But this represents a drop in the ocean of potential for clean technology applications. UNEP's work in clean energy finance includes facilitating interaction between public and private-sector financiers, aiming to build the capabilities and awareness of both sides regarding financial investments in clean technology.

UNEP uses its international expertise to create an environment where finance institutions can connect with key green energy stakeholders – including suppliers, developers, policy-makers, regulators, entrepreneurs, and end-users – and essential partnerships can be forged. UNEP also supports countries in accessing adaptation finance from a number of sources, including the Global Environment Facility, the Adaptation Fund and various other multilateral and bilateral funding sources. The Green Climate Fund (GCF) presents a major opportunity to bridge the finance gap to stimulate lowemission and climate-resilient development. UNEP, together with other partners, including UNDP, has initiated a GCF investment readiness programme that will build and strengthen the institutional capacity of national entities, with a focus on direct access; and help countries prepare climate change mitigation and adaptation investment strategies and programmes, including through the active involvement of the private sector.

This section highlights some of the ongoing work in finance in the energy, mitigation and adaptation areas.



PART IV: BRIDGING THE FINANCE GAP

SCALING UP CLEAN ENERGY INVESTMENT





THE PROBLEM

Significant additional investment is required to support clean energy technologies in developing countries and thereby constrain climate change and provide a basis for sustainable development. If current financing levels are to be scaled-up, the private sector will have to be a key partner as it is responsible for the allocation of the majority of global financial resources. But there is currently a gap between the investment requirement and the availability of appropriate funds. Not all private sector financiers are aware of investment opportunities related to clean technologies in developing countries. This is where public sector programmes can play a role to reduce private investors perceived risks such as uncertainties over local markets, governance, infrastructure and available resources. Public sector involvement is often crucial to attracting large-scale private sector finance. Despite acknowledgement of the likely benefits, the gap between potential public and private sector financiers of clean technologies remains very wide.

THE SOLUTION

Governments can show the commercial viability of clean energy and reduce perceived risks by covering some of the start-up costs and/or setting up demonstration projects to show investors that projects are truly "bankable."

UNEP's Energy Finance programme activities take many different approaches – often simultaneously – according to the specific needs of the country and the project. For example, sometimes lowering costs for consumers can stimulate a new market and attract financing, and a facility can be set up to help local banks provide low-cost loans to clean tech users.

At other times, countries would like to attract finance to increase the viability of clean technology applications by participating in the global carbon market, but need technical support and guidance on the appropriate carbon finance mechanisms.

Other UNEP interventions offer training for financial institutions in developing countries geared at improving the prospects for clean technology projects, or financial support to suppliers and developers to help get lowcarbon projects up and running.

IMPACTS

Despite the difficult global economic conditions during 2012, many UNEP initiatives have made great positive impacts by scaling-up the level of investment in clean technologies.

For example:

- UNEP's Climate Finance Innovation Facility provided technical assistance of US\$150,000 to the Bank of Taizhou in China to help develop an energy efficiency loan product. The actual investment made by the bank was US\$3,269,500.
- UNEP's Seed Capital Assistance Facility supported an 80MW wind farm in South Africa and a 10MW hydropower project in Tanzania. UNEP funding of

US\$315,000 for these projects has mobilised private investment of US\$1.5m and potential follow-on investment of around US\$14m.

SUPPORT

UNEP's Energy Finance Unit works closely with Frankfurt School – UNEP Collaborating Centre for Climate and Sustainable Energy Finance, to offer extensive climate finance skills and services. The initiative is supported by a range of donors including the governments of France, Germany, Italy, and Sweden.

WEBSITE

www.unep.org/energy/activities/financialinnovation/ tabid/79501/default.aspx

SUCCESS STORY

Seed Capital Assistance Facility (SCAF)

In many developing countries entrepreneurs can transform markets, but entrepreneurs face a number of challenges doing so in the clean energy sector. A lack of early stage financing, high transaction costs and insufficient risk-adjusted returns are just some of them.

SCAF was designed to help overcome these obstacles, offering cost-sharing support to clean energy fund managers to co-invest seed financing in early stage project developments.

An example is the South African Evolution One Fund, Africa's first specialised "clean tech" investment fund with approximately US\$90 million in committed capital. US\$1 million of funding from SCAF is being matched by US\$5 million from Evolution One Fund to develop and invest seed capital in a growing portfolio of renewable energy projects in Southern Africa.



PART IV: BRIDGING THE FINANCE GAP

BUILDING COUNTRY CAPACITY TO ACCESS AND MANAGE CLIMATE FUNDS





THE PROBLEM

Developing countries will soon have at their disposal a significant new form of finance to help them respond to the challenges of climate change following the approval of the Governing Instrument for the Green Climate Fund (GCF) at COPI7 in Durban in 2011.

The GCF's Governing Instrument states that "The Fund will play a key role in channeling new, additional, adequate and predictable financial resources to developing countries and will catalyze climate finance, both public and private, and at the international and national levels". However, experience so far shows that most potential beneficiary countries are not yet ready for an increased influx of climate funding. Institutional capacities need to be developed to oversee funds implementation, and a pipeline of projects needs to be prepared involving both public and private actors. The Governing Instrument makes specific reference to the need to assist developing countries in building their capacities for direct access and to provide special support to Least Developed Countries and Small Island States in building capacity to engage the private sector.

THE SOLUTION

UNEP is setting up a GCF Investment Readiness Programme to help countries prepare to implement the GCF both institutionally and in terms of private sector engagement. Assistance will comprise of helping to build and strengthen the institutional capacity of national governments and designated public finance institutions. The programme will also provide support for the development of climate change adaptation and mitigation programmes and projects of a transformative nature aligned with national climate change strategies.

Two important aspects of the GCF, direct access and private sector engagement, will be highlighted by UNEP

as they both involve significant readiness support before becoming functionally operational.

By building their capacity to access, implement and monitor scaled-up levels of investment, beneficiary countries will increase their resilience to climate change and be better prepared to make the transition to low carbon economies.

THE IMPACTS

The programme will accelerate adaptation, REDD+ and mitigation actions in target countries by strengthening national frameworks for climate change action, facilitating GCF accreditation of designated national public finances and by supporting the development of mitigation and adaptation programmes of a transformative nature to be supported by international climate finance.

Some of the specific target impacts include: nationallevel systems and processes for direct access; robust accountability and reporting systems; concrete project proposals; and the development of specific new financial products and programmes. By building capacity to access, implement and monitor scaled-up levels of investment, beneficiary countries will increase their resilience to climate change and be better prepared to make the transition to low carbon economies.

SUPPORT

Government of Germany

SUCCESS STORY

In 2011 the Frankfurt School of Finance & Management and UNEP set up the Collaborating Centre for Climate & Sustainable Energy Finance. Funded by the German Government, the Centre is designed to support the transformation to resilient low-carbon and resourceefficient economies by mobilizing investment and strengthening associated markets. The Centre works with key actors in finance, government and industry, to help prepare countries for increased investment in sustainable energy and climate change mitigation and adaptation. The Centre identifies and multiplies good practice in sustainable energy and climate finance and serves as UNEP's main knowledge hub for sustainable energy and climate finance. www.fs-unep-centre.org





PART IV: BRIDGING THE FINANCE GAP

CLEAR WIN FOR CLEAN TECHNOLOGY IN THE MEDITERRANEAN





THE PROBLEM

Although small scale renewable energy technologies, such as photovoltaic systems and solar water heaters (SWH), are considered reliable and competitive, they are still not fully established in the Southern and Eastern Mediterranean region due to the high upfront cost for the end-users, and the lack of financing options tailored for this type of investment.

THE SOLUTION

The Mediterranean Investment Facility (MIF) helps to establish innovative financing mechanisms to allow end-users to invest in renewable energies.

The integrated approach is based on:

- I. Financing mechanism design, implementation and monitoring
- 2. Training and capacity building for government officials, financing institutions as well as for technology suppliers and installers
- 3. Quality control and checking system to select equipment complying with international standards and to check the operation of the systems

THE IMPACTS

- More than 145,100 households now get their hot water exclusively from the sun in Tunisia, thanks to the country's solar water heater programme for the residential sector – PROSOL – that has created a sustainable market for solar water heaters, with 50 technology suppliers and more than 3,000 direct jobs.
- Since the launch of the photovoltaic project for the residential sector in Tunisia – PROSOL ELEC – in 2011, more than 740 families have installed photovoltaic systems.

- In the tertiary sector, particularly in the hotel sector, 24 collective solar water heaters were installed in Tunisia and Egypt corresponding to more than two million kilowatt-hours of solar energy produced every year.
- Detailed studies are ongoing in Tunisia to set a sound regulatory framework to integrate solar thermal energy in the industrial sector.
- An innovative financing support mechanism in Morocco enables two million households to phase out incandescent lighting and repay the cost of new energy-efficient lamps through their electricity bill over 21 months.
- In Montenegro, free loans to end-users are provided through local commercial banks over a period of seven years to install solar water heaters.

SUPPORT

Italian Ministry of Environment, Land and Sea

WEBSITE

www.unep.org/energy/Activities/ MediterraneanInvestmentFacilityMIF/tabid/79486/ Default.aspx



SUCCESS STORY

Within the MIF, PROSOL provides financial support to local households through a combination of value added tax exemptions, customs duty reductions and reduced-rate bank loans. The repayment of the loan is included in the regular electricity bill, which lowers the risk for local banks that are then willing to finance SWH projects with reduced interest rates.

An interest rate subsidy was available during the first phase of PROSOL (2005-2006) that reduced the interest rate of the loan to zero per cent for the final end user. The Tunisian government provides a subsidy of 20 per cent of the system cost. This was initially a temporary measure funded by UNEP to "prime" the market, but was later made permanent by the Tunisian government. Thanks to PROSOL more than 80.000m² of solar collectors are installed every year.



MITIGATION

Support countries to make the transition onto low emission development pathways and a green economy by assessing emissions reduction opportunities, phasing out obsolete technologies, facilitating access to finance (including stimulating private sector involvement) and promoting the scaling up of clean and renewable energy sources and energy efficiency through policy, technology and investment choices.

ADAPTATION

Assist countries to reduce their vulnerabilities, and increase their resilience against the impact of climate change by supporting them in the production of sound knowledge, the use of ecosystem services and ecosystem management, and the integration of adaptation into development planning and policies.

REDD

Support countries to develop transformative REDD+ strategies, finance approaches and institutions, and test innovative REDD+ pilot projects that include multiple benefits in areas such as biodiversity and livelihoods. This work includes promoting consultations among stakeholders, including indigenous peoples and forestdependent communities and engagement with the private sector to demonstrate the potential for REDD+ to be a catalyst for the Green Economy.

SCIENCE

Draw on strengths as a science-based organization, facilitate the development of climate change assessments, including for new and emerging issues, and climate impacts research to inform policies and also support countries in the development of their own climate science expertise.

OUTREACH

Improve the general understanding and awareness of climate change, ensuring that national policy makers and negotiators, trade unions, youth, civil society and the private sector have access to relevant, clear and understandable climate change information. For more information on UNEP's work on climate change, please visit our website:

www.unep.org/climatechange

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