

A publication of the United Nations System Chief Executives Board for Coordination (CEB)

HOW THE UNITED NATIONS SYSTEM SUPPORTS AMBITIOUS ACTION ON CLIMATE CHANGE

The United Nations System Delivering as One on
Climate Change and Sustainable Development

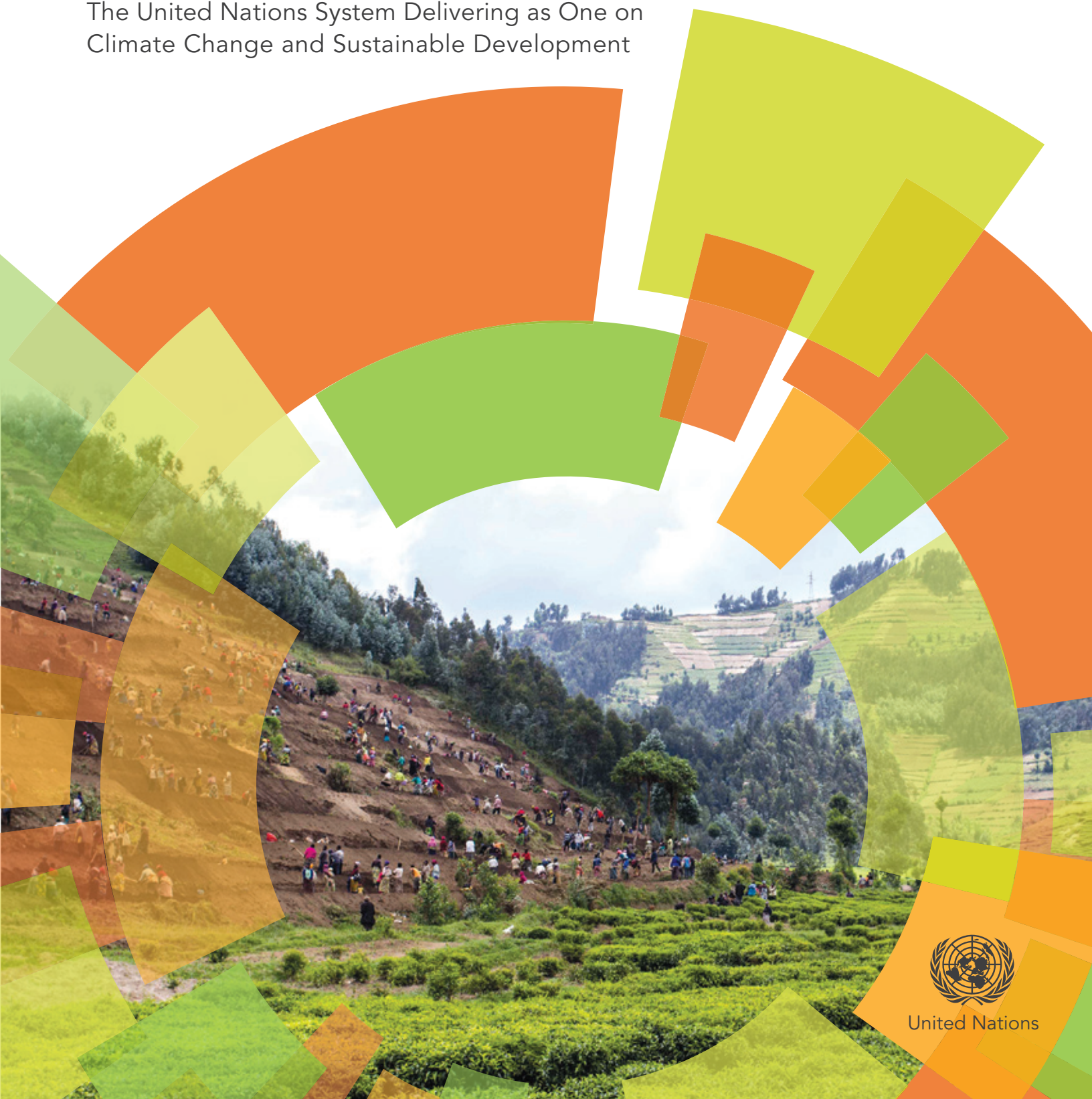




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PREFACE

This brochure has been jointly written and produced by some 40 United Nations (UN) specialized agencies, funds, programmes and other bodies that coordinate their respective activities on climate change. The brochure has one simple purpose: to show Governments and the public how the diverse entities of the UN system work together to support ambitious international action on climate change. It introduces the comprehensive and multidisciplinary projects and programmes undertaken by the UN system, many of them through partnerships involving UN and other international organizations, civil society, the private sector and academia. Given the extraordinary breadth and depth of these activities, the text provides representative examples to illustrate how the UN system is working globally, regionally and nationally around the world.

Many of the UN system's activities in the domain of climate change are coordinated through the Working Group on Climate Change, currently chaired by the World Meteorological Organization (WMO). This working group was established in 2007 under the High Level Committee on Programmes (HLCP), which is one of three pillars under the UN system Chief Executives Board for Coordination (CEB), chaired by UN Secretary-General Ban Ki-moon. Its members exchange information, collaborate on joint programming and operational activities, and coordinate their contributions to the United Nations Framework Convention on Climate Change (UNFCCC) and other system-wide climate change priorities. The Working Group on Climate Change interacts with national and regional coordination structures, including through the United Nations Development Assistance Framework process.

This coordination continues to improve the ability of the UN and its specialized agencies, funds, programmes, and regional commissions, as well as the World Bank Group, to serve their members and maximize the returns on members' investments.



FOREWORD BY THE UNITED NATIONS SECRETARY-GENERAL

More than any other institution or organization in the world, the United Nations has been at the forefront of efforts to address climate change. The UN has been a leader in assessing the state of the science through the reports of the Intergovernmental Panel on Climate Change. It has brought countries together through the UN Framework Convention on Climate Change, and is currently working to negotiate a universal and meaningful climate agreement. And it is working with countries on strategies, policies and projects to promote a low-carbon economy.

Climate change is the defining issue of our time. It is the ultimate test for the global community to unite and meet a challenge that respects no borders. The effects of climate change are already widespread, costly and consequential. But there are many things we can do now, with existing technologies, to address it.

This booklet puts the climate change activities of the UN system -- which includes about 40 specialized agencies, funds, programmes and other bodies -- into the broader context of sustainable development. It presents the story of how the UN is working with all levels of government, business and civil society as an effective partner.

The range of actions is vast: it includes efforts to improve local weather forecasts; diminish deadly air pollution; minimize risk from disasters; manage and conserve forests, reduce deforestation and assist forest communities; cut emissions from transport on air, land and sea; and make urban areas more sustainable, energy efficient and liveable.

The UN System is committed to advancing solutions that will build prosperous economies and more resilient communities while addressing climate change. By acting on climate change we can significantly advance the sustainable development agenda.

TOWARDS A CARBON-NEUTRAL FUTURE

Climate change and sustainable development are the central challenges of our time. They are inseparably linked and need to be addressed together. Action to reduce greenhouse gas (GHG) emissions and adapt to climate impacts is essential for ensuring sustainable development. At the same time, only sustainable development can provide the stable political, economic, social and environmental conditions that all countries need to address climate change successfully and build carbon-neutral economies. This is why the UN system is fully committed to supporting the international community as it confronts climate change while working to build a sustainable world for the twenty-first century.

Climate change is warming the planet, altering weather patterns, increasing the severity of floods and droughts, raising sea levels, acidifying the ocean, melting sea and land ice, threatening plant and animal species, and affecting the spread of diseases. These emerging climate impacts are already aggravating other stresses on sustainable development, ranging from land degradation and resource depletion to land, air and water pollution.

Drawing on the best available science, Governments have recognized that the average global temperature must rise by no more than 2°C above pre-industrial levels if dangerous climate change is to be avoided. This can be achieved if global emissions peak within the coming decade and then decline until there are no new net emissions as early as possible in the second half of the century. Ambitious action is needed, and it is needed now. Fortunately, there are at least three good reasons to have confidence in our ability to meet the challenge:



A family in Tarialan, Uvs Province, Mongolia, uses a solar panel to generate power for their ger, a traditional Mongolian tent.
UN Photo/Eskinder Debebe



Reflection of the United Nations Headquarters building seen from the windshield of one of the electric cars parked at the UN.
UN Photo/JC McIlwaine

- 1. The resources are available:** The human, financial and technological resources required to succeed are already available in many parts of the world. They need to be deployed faster and in innovative ways to complete the transformation to a low-carbon, resource-efficient economy.
- 2. An international legal framework is in place:** Governments have been collaborating over the past two decades through UNFCCC to reduce emissions, build climate resilience and promote sustainable development. They are now developing a new, universal climate agreement to be adopted in Paris in late 2015. The aim is to raise ambition in the immediate future – from now through 2020 – and to put the world on track to achieve its medium and long-term climate goals.
- 3. Many people are already taking action:** There is today a rising groundswell of action by local and national governments, communities, businesses and investors. These diverse actors recognize the huge opportunities offered by a low-carbon, climate-resilient future, including such co-benefits as greater security, reduced pollution, improved public health, the sustainable management of the world's natural and socio-economic resources, and the creation of decent jobs.

The UN and its specialized agencies, programmes, funds, conventions and other bodies are united in their conviction that addressing climate change and achieving sustainable development will require coordination and cooperation across all levels of governance, economies and societies. The UN system brings to the table the advantages of international political legitimacy, wide-ranging and cross-cutting expertise, a national and regional presence, and strong partnerships with civil society, academia and the private sector. It relies on these strengths to promote action through both UNFCCC and an integrated portfolio of programmes and projects. This brochure describes a selection of UN system activities in support of local, national, regional and global action on climate change.

REDUCING EMISSIONS, BUILDING RESILIENCE

Climate change affects, and is affected by, all economic and social sectors. The UN system supports a wide variety of national efforts to reduce GHG emissions and adapt to climate change. While UN agencies and programmes pursue many activities within their own mandates, increasingly they combine their respective expertise to support cross-cutting initiatives.

These joint efforts are also increasingly underpinned by the ability of Governments and UN organizations to leverage the new international climate institutions launched under UNFCCC. These mechanisms promote financing, technology, adaptation, emissions reductions, capacity-building and more. For example, the Convention's Clean Development Mechanism, the first international system to boost investment in developing-country projects for reducing emissions at low cost, has become a model for how to encourage innovative climate solutions. This includes solutions that engage civil society, provide co-benefits and stimulate sustainable development.

Some of the many ways in which the UN supports climate action can be illustrated through a few examples from some key sectors.

Low-carbon energy and energy efficiency

Coal, oil and gas have fuelled the world's industrialization and contributed enormously to economic development and human well-being. As a result, however, energy-related carbon dioxide (CO₂) emissions currently account for some two thirds of global GHG emissions. As the global economy expands, the total amount of CO₂ emitted by the energy sector continues to rise.



A village shop in Sri Lanka at dusk lit by solar lamps. © Dominic Sansoni/The World Bank

of Ghana to explore policy options for increasing the use of low-carbon energy. The study used the IAEA energy planning model to analyse the country's energy system, and it obtained data on renewable and other energy sources from a number of UN agencies. The focus of this particular study was on renewables, but it also included nuclear as an option. This enabled Ghana to explore alternative scenarios for developing a much bigger low-carbon energy sector based on different assumptions about costs, technologies and other variables. The same team of UN bodies assisted Sichuan Province, China, to conduct a similar study.

Agencies of the UN are also facilitating efforts to pursue sustainable energy using innovative new technologies. For example, the use of connected (or "smart") sensors in electricity grids is starting to make it possible to transform traditional electricity networks into "smart grids". When grids are made more intelligent, energy can be sent and used only when needed. This smarter energy network uses distributed energy resources and advanced communication and control technologies to deliver electricity more cost-effectively, with lower GHG emissions and the active involvement of customers. The International Telecommunications Union is developing UN technical standards to support this technology's availability on the mass market.

The International Labour Organization promotes low-carbon energy through its support to energy cooperatives and other member-based structures. Energy cooperatives generate and distribute affordable, low-carbon power while creating local jobs. They enable people to make their own decisions on the power they use and give a voice to those who have previously been excluded from energy services and decision-making.

International transport

Globalization and the growth of international transport have contributed significantly to higher standards of living across the world. Airlines now carry more than 3 billion passengers a year and expect to transport over 7 billion by 2030; they also carry 50 million tonnes of cargo. Maritime transport is the most energy efficient mode of mass cargo transport; in 2012 ships carried about 9.2 billion tonnes of cargo and over 2.1 billion passengers. Road vehicles also contribute to global emissions.

Emerging technologies and strategies are readily available for limiting emissions from the transport sector. The importance that the public puts on clean, affordable transport marks the sector out as a high-profile leader on climate action. Activities within the UN system focus on cross-border transport, but the improvements and goals pursued at the international level also have a positive impact on emissions from domestic transport.

The International Civil Aviation Organization is working with its member States, the aviation industry and other stakeholders to develop global partnerships and actions for reducing emissions. It has reaffirmed a collective goal of raising fuel efficiency by 2 per cent per year and to stabilize aviation emissions at 2020 levels. Agreed measures include promoting new aircraft technologies, improving operations, switching to alternative fuels, optimizing routes and developing a market-based measurement scheme for the sector. Recent innovations include a CO₂ certification standard for aircraft by 2016 and the development of national action plans on CO₂ emissions reduction.



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The International Maritime Organization has adopted a suite of mandatory technical and operational measures for ships that entered into force in January 2013 under the International Convention for the Prevention of Pollution from Ships. These measures require new ships to be constructed according to a mandatory design index, which sets minimum and progressively strengthened energy-efficiency levels (CO₂ emissions per tonne-mile) for different ship types and sizes. Furthermore, ships are required to have a Ship Energy Efficiency Management Plan that assists in the identification of operational energy efficiency improvements. By 2050, the successful implementation of this framework could reduce CO₂ emissions from international shipping by up to 1.3 gigatonnes per year compared with the business-as-usual scenario.

Improved fuel efficiency and reduced emissions for private and commercial road vehicles are pursued through the World Forum for the Harmonization of Vehicle Regulations, whose work is supported by the United Nations Economic Commission for Europe (ECE). The Forum's efforts have led to substantial cuts of up to 90 per cent of key pollutants since the 1970s. In March 2014, the Forum adopted the first international test procedure for measuring CO₂ emissions from cars, thus allowing Governments around the world to accurately determine carbon emission limits.



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In addition, the UN regional commissions have collaborated on developing a modelling tool to assess CO₂ emissions from inland transport activities, including road, rail and waterways; the tool has been piloted by Chile, Ethiopia, France, Montenegro, Thailand and Tunisia.

Cities and human settlements

Half of the world's population already lives in urban areas, and the number of city dwellers is set to grow dramatically over the course of the century. Urban areas generate 80 per cent of global gross domestic product and are major contributors to climate change, accounting for 67–76 per cent of energy use and 71–76 per cent of energy-related CO₂ emissions. They are also home to the majority of people, infrastructures and socio-economic assets that must adapt to the changing climate.

At the same time, many cities are already providing leadership on the climate issue. Their administrations recognize that reducing emissions through the construction of more resilient buildings, efficient public transport networks and low-carbon energy systems yields immediate and significant economic and social benefits.

Recognizing the potential for reducing GHG emissions through improved energy efficiency in buildings, the ECE, UN-Habitat and the City of Vienna are promoting good practices for energy-efficient housing in the ECE region. They have gathered evidence demonstrating that tech-

nologies that are already available can reduce a building's energy consumption by 30–50 per cent without greatly increasing investment costs.

UN-Habitat is working with ICLEI Local Governments for Sustainability to promote a low-carbon transition for cities in emerging economies. The partners are working with selected local governments in Brazil, India, Indonesia and South Africa to integrate low-carbon strategies into key sectors.

The World Bank Group's Excellence in Design for Greater Efficiencies Green Building Market Transformation Program seeks to encourage people to think about and value green buildings as practical and necessary and to make them more available in developing countries, including as low-income housing. The goal is to make the benefits of green buildings clearer for builders, bankers and buyers and to change behaviour and decisions accordingly.

To help cities better address the impacts of climate change, the United Nations Office for Disaster-risk Reduction and UN-Habitat have mobilized over 1 800 cities and local governments to commit to 10 essential policies to make their cities more resilient. To date, over 700 cities have assessed their own progress in implementation.

Paying for low-carbon and climate-resilient infrastructure investments is a constant challenge. The World Bank Group has developed a new capital investment planning initiative that helps cities develop strategies to make their infrastructure investments more "climate smart". The



Flooding in Kawerle, Kampala. © UN-HABITAT/ Nicholas Kajoba

Group has also launched a series of workshops to help cities improve their financial management practices, a necessary step if cities are to increase their access to private capital for climate-related infrastructure projects. More than 30 cities have already participated in these “city creditworthiness” workshops. One participant, the city of Kampala, has already achieved impressive results, nearly doubling its own-source revenues after adopting practices discussed at the workshop.

Meanwhile, an inter-agency Task Team on Urban Risk Management and Climate-smart Cities, organized under the auspices of the United Nations High-level Committee on Programmes’ Working Group on Climate Change, has begun to map tools and formulate a “One UN” approach to building urban resilience and fostering climate-smart cities.

Agriculture and food security

People whose livelihoods depend on farming, fishing, herding and forestry have a great stake in global action to mitigate climate change and boost resilience. Herders and subsistence farmers, particularly those living in areas exposed to water shortages, soil erosion, deforestation and land degradation, have few means to protect themselves from additional climate impacts. Fishing communities are, likewise, vulnerable to sea-level rise, ocean acidification and the displacement of fish stocks. Over 2 billion small-scale agricultural producers, many of them women, provide as much as 80 per cent of food consumed in much of the developing world. The resulting impacts on food security affect the wider community and can spill over into national and regional insecurity.



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Fishermen carry nets back to their village in Mucoroge, Mozambique. © IFAD/ Alex Webb

Facing these challenges without exacerbating global pressure on natural resources will require radical changes in how we manage our agricultural sectors, including crops, livestock, forestry and fisheries. Agriculture not only suffers the impacts of climate change, it contributes considerably to global GHG emissions. New estimates by the Food and Agriculture Organization of the United Nations (FAO) show that GHG emissions from agriculture, forestry and fisheries have nearly doubled over the past 50 years and could increase an additional 30 per cent by 2050, unless greater efforts are made to reduce them. But agriculture also has the potential to be an important part of the solution.

Smallholders have traditionally drawn on indigenous knowledge and historical observations to manage the effects of climate variability. Today, however, the speed and intensity of change is undermining their capacity to do so. Innovative policies and investment programmes help smallholders to anticipate, absorb and recover from climate shocks and stresses. They need access to climate-resilient seeds, sustainable management practices, good infrastructure, markets, financial and insurance products, and weather and climate services. The Centre for Development and Environment, World Soil Information and FAO manage a database – World Overview of Conservation Approaches and Technologies – containing over 700 sustainable land-management technologies and approaches that can help farmers cope with climate change.

A collaborative effort between FAO, the International Fund for Agricultural Development (IFAD), the World Food Programme (WFP), the World Bank Group and others is supporting countries

in addressing the impacts of climate change on food security. They exchange climate-risk information, assist Governments with reporting to UNFCCC on agriculture adaptation plans, and promote the Global Alliance on Climate-smart Agriculture for food security and nutrition. They help farmers, fishers, forest-dependent people and food-insecure communities to sustainably increase agricultural productivity, adapt and build resilience to climate change and mitigate GHG emissions. The organizations IFAD and FAO have also joined forces in forming the Global Partnership for Climate, Fisheries and Aquaculture.

A specific example of UN-system action is the FAO Transboundary Agro-ecosystem Management Project for the Kagera River basin in Africa, funded by the Global Environment Facility. This regional project assists Burundi, Rwanda, Uganda and the United Republic of Tanzania to restore degraded lands, sequester carbon and adapt to climate change. It promotes agricultural biodiversity and improves agricultural production, livelihoods and food security.

In addition, IFAD launched the Adaptation for Smallholder Agriculture Programme in 2012 to make climate and environmental finance work for smallholder farmers. The Programme provides dedicated financing to scale up and integrate climate change adaptation measures across IFAD's approximately US\$ 1 billion per year of agricultural investment programmes. For example, in Yemen the programme supports 550 villages to prioritize investment for water harvesting, drinking water management, land conservation, road rehabilitation and the adoption of renewable energy.

The humanitarian efforts of WFP are often a response to extreme events such as floods, storms and droughts. It therefore assists the most food-insecure people to build climate resilience through vulnerability assessments and early warning systems. It also promotes food security by, for example, providing tailored climate information to farmers and vulnerable communities through climate services and through innovative finance projects.

Natural resources management

Freshwater, forests, biological diversity and land are essential natural resources that are being severely affected by climate change. Higher temperatures are altering the distribution of rainfall, snowmelt, river flow and groundwater; triggering floods and droughts; and disrupting water sources. Climate-related damage is undermining the natural self-regulation that healthy ecosystems contribute to food production, clean air and flood control. In many regions declining rainfall is reducing the land's vitality. These climate impacts, combined with other human-generated stresses, are threatening to reverse previous efforts to alleviate poverty and advance sustainable development.

Poor natural-resource management also generates GHG emissions. Depending on how they are managed, forests can be either major emitters or major absorbers of CO₂ emissions. Forest loss accounts for up to 17 per cent of global CO₂ emissions, while soil erosion and desertification also contribute. The UN family is promoting ways both to reduce emissions and to adapt in this sector through a range of conventions, programmes and mechanisms:



UN Photo/Albert González Farran

- The UN Programme on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD Programme), a collaborative initiative building on the convening role and expertise of FAO, the United Nations Development Programme (UNDP) and the United Nations Environment Programme (UNEP) supports countries in developing nationally led “REDD+” strategies and capacities on these issues. Established under UNFCCC, REDD+ offers social, economic and environmental benefits by promoting economic growth, improving livelihoods, creating green supply chains, boosting food security, conserving forests and fighting climate change – all at the same time. The UN-REDD Programme cooperates with donor countries and the World Bank-facilitated Forest Carbon Partnership Facility, Forest Investment Programme and BioCarbon Fund.

Together, the UN-REDD Programme and World Bank mechanisms engage with over 60 countries that are home to the vast majority of the world’s forests. They bring together stakeholders at the national, regional and global levels to develop strategies that will benefit people and the planet. To date, they have channelled over US\$ 1.75 billion into support for national REDD+ action. Many countries are now taking bold steps to link REDD+ to the development of green economies and advancing innovative ideas for programmes to reduce forest emissions.



- The United Nations Convention on Biological Diversity promotes biodiversity and the sustainable and fair use of its benefits. Agencies and programmes of the UN are assisting the member Governments of this Convention to understand and combine action on both biodiversity and climate change under their work programmes. For example, the conservation or restoration of biodiverse habitats can remove CO₂ from the atmosphere and store it in biomass. Protecting or replanting mangroves can reduce the impacts of increased flooding and storm surges.
- The United Nations Convention to Combat Desertification addresses the degradation of drylands, which is being aggravated by climate change. With support from many parts of the UN system, the Convention promotes adaptation to climate change through measures to prevent erosion, improve soil structure and restore the land's resilience and productivity.
- UN-Water, an inter-agency coordination mechanism for freshwater issues, including sanitation, adds value to other UN programmes and projects by finding ways to encourage efficient and effective joint efforts by contributing organizations. Access to freshwater is essential to human life, yet it is under severe threat in many regions due to climate change.

Public health

Climate change is closely linked to some of the leading global health challenges of the twenty-first century. These include death and injury from extreme weather events, outbreaks of infections driven by heat, droughts and floods, and the spread of disease carriers such as insects



Woman with water jug next to rain water collection tank, Sri Lanka. © Dominic Sansoni/ The World Bank

and of respiratory illnesses from urban air pollution. Reducing pollution and strengthening local resilience to climate impacts bring large and immediate benefits. In addition to saving lives, this reduces health costs and increases social well-being and productivity.

Countries with weak public health systems, many of them in Africa, are at particular risk. Over 95 per cent of least developed countries (LDCs) identify health as a priority sector for adaptation to climate change, but less than 30 per cent have developed an adequate assessment or response to this challenge. Poverty and limited infrastructure combined with natural climate variability leave many people, particularly children and pregnant women, exposed to climate-sensitive diseases such as malaria and cholera. Warmer temperatures, changes in precipitation, diminishing water supplies, greater food insecurity, and more floods and droughts will only increase the risk of epidemics.

The UN system assists vulnerable countries to monitor, analyse and address climate and health challenges. It recognizes that effective climate policies are an integral part of successful long-term public health planning. For example, the Global Framework for Climate Services is a universal, intergovernmental partnership for promoting the production and use of climate information and services for decision-making on public health, disaster risk, agriculture and food security, and other challenges. The World Health Organization, WMO, WFP, the International Federation of Red Cross and Red Crescent Societies and others are collaborating through the Global Framework for Climate Services to assist, initially, Malawi and the United Republic of Tanzania to use tailored climate services to anticipate and respond to outbreaks of malaria, cholera and other diseases.

The UN also serves as the secretariat for the Climate and Clean Air Coalition to Reduce Short-lived Climate Pollutants. The Coalition brings together over 50 national, multilateral and non-governmental partners to reduce pollutants that affect both climate and human health. Black carbon and other particulates and gases, including carbon monoxide and ozone, contribute to approximately 7 million deaths every year. The Coalition assesses the health impacts and anticipated co-benefits of strategies to reduce such emissions. It supports tracking and monitoring systems linking Coalition initiatives to air pollution measurements. It assists countries to develop their capacity in this field and raises awareness of the health benefits of reducing short-lived pollutants. Recently, the Coalition's efforts received a boost when the ECE Convention on Long-range Transboundary Air Pollution adopted the first-ever emission-reduction commitments for black carbon.

Disaster-risk reduction

Between 2002 and 2011, over a million people lost their lives in natural disasters. Economic losses from natural disasters have risen from US\$ 50 billion each year in the 1980s to just under US\$ 200 billion each year in the last decade. Climate-related hazards are likely to increase in frequency, intensity, extent and duration. Meanwhile, economic progress, rapid urbanization and population growth combine to concentrate people, jobs and property in vulnerable areas.

International cooperation in disaster-risk reduction has been spurred by the internationally agreed Hyogo Framework for Action: Building the Resilience of Nations and Communities to Disasters 2005–2015. With Governments in the lead, the Framework has guided UN agencies and partners



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in civil society and the private sector in stepping up their efforts to build resilience to disasters at national and local levels. Around the world, UN country teams have integrated disaster risk and climate change into their assessments of development needs and gaps. As a result, most UN development assistance frameworks have prioritized disaster- and climate-risk reduction. This has contributed to steady, if uneven, progress in each of the Framework's five priority areas.

In 2013, the United Nations Chief Executives Board adopted the Plan of Action on Disaster-risk Reduction for Resilience as a common strategy for integrating disaster-risk reduction into the UN system's work at country level. The Plan includes commitments to ensure timely, coordinated and high quality assistance to all countries where disaster losses pose a threat to people's health and development.

At the global level, more than 10 UN entities plus the World Bank Group cooperate in preparing the Global Assessment Report on Disaster-risk Reduction, a biennial assessment of disaster-risk reduction and natural hazards. This report is based on national self-assessments of progress in implementing the Hyogo Framework for Action and is supported by national disaster damage and loss databases.

Because disasters and other climate impacts are projected to increase the displacement of people, the United Nations High Commissioner for Refugees (UNHCR) and the International Organization for Migration (IOM), in partnership with other UN organizations and non-governmental organizations, are implementing activities to prevent displacement through resilience strategies such as migration and planned relocation. For example, UNHCR, in partnership with the Norwegian Refugee Council Internal Displacement Monitoring Centre and with funding from the European Union, Norway and Switzerland, is implementing a project on "Climate change and displacement: Building an evidence base and equipping States with tools and guidance for action".

A European Union-funded project has been launched by IOM on "Migration, environment and climate change: Evidence for policy" to provide new evidence for policymaking on migration, environment and climate change. The project puts a particular emphasis on migration as an adaptation strategy. The IOM is also working with partners to deliver capacity-building and training to policymakers and practitioners working on climate, disaster-risk reduction and migration issues.

The preparatory process for the post-2015 framework for disaster-risk reduction was launched in 2012. Managed through the UN system, the framework will link together the related concerns of sustainable development, climate change and disaster prevention and preparedness.

EMPOWERING GOVERNMENTS TO ACT

In addition to UN-wide coordination in the above sectors, most of which are climate sensitive and sources of significant emissions, the UN system collaborates on providing an enabling environment for taking climate action. Resources, science, technology, education and training, capacity development, partnerships, and data and information are all essential to empowering countries to take action on all climate-related sectors. They also make countries more effective in their pursuit of sustainable development.

Mobilizing resources

Low-carbon growth offers tremendous opportunities for investment and leads to stronger, more resilient communities, increased job growth, and healthier citizens. Governments, investors and businesses are beginning to work together to mobilize global investments. Governments are sending the right signals through targeted policies and increasingly recognize that public finance alone is not enough: they also need to mobilize public finance to unlock private investment. As-



In São Tomé and Príncipe, climate change brings severe and dangerous weather conditions. Increased fog, wind, and storms are particularly dangerous for fishermen, who traditionally fish in small, open sail boats and navigate by sight. An ongoing UNDP project, in partnership with the Ministry of Public Works and the National Meteorological Institute, and with financing from the Least Developed Countries Fund, aims to help develop more reliable early warning systems to monitor these increasingly severe hydro-meteorological conditions. © UNDP

set owners are measuring and reducing their climate risk and scaling up investments by enabling longer term debt such as green bonds and lowering the cost of capital for low-carbon projects. More needs to be done to scale up these early successes.

The International Monetary Fund and the World Bank Group collaborate with the Organization for Economic Cooperation and Development on studying options for climate finance. Their work on domestic and international fiscal instruments concludes that putting a price on carbon is a highly effective way to reduce emissions and raise climate financing. The World Bank Group is creating a coalition of first movers to instigate such a price. There is a growing momentum toward pricing carbon – over 40 countries and 20 sub-national governments are moving to put a price on carbon, and over 100 global companies already use an internal “shadow” carbon price to guide investments. The International Monetary Fund provides technical assistance to countries interested in pricing GHG emissions and reforming their environmental and energy taxes.

Another way to leverage domestic funds is to integrate climate action into national development strategies. For example, the Low Carbon Green Growth Roadmap developed by the Economic and Social Commission for Asia and the Pacific provides guidance to countries on how to translate action on climate change into economic growth opportunities. Some countries in the region are now moving in this direction. Indonesia seeks to mainstream climate change into its pro-growth, pro-job, and pro-poor 2005–2025 development plan, while Pacific island nations are improving energy efficiency and investing in renewable energy to reduce dependence on imported fossil fuels. Similar programmes are underway in other regions of the world.

An extensive portfolio of programmes are operated by UNDP that assist countries to access and leverage climate finance and better align climate policy with national development policies. These include the Climate Finance Readiness Framework, the Low Emission Capacity-building Programme, support for national adaptation planning, and a series of climate public expenditure reviews, which assist countries to identify how climate finance can best be aligned with national budgets. In countries that have carried out these reviews, it has been found that anywhere from 3–15 per cent of national budgets support climate-relevant interventions.

The United Nations Global Compact, the United Nations Conference on Trade and Development, the UNEP Finance Initiative and Principles for Responsible Investment are collaborating to mobilize the required volumes of “private sustainability finance” and to direct private investment into a sustainable global economy. This initiative also mobilizes both public and philanthropic action. Private climate finance requires public incentives in various forms, ranging from comprehensive legislative and fiscal frameworks that make markets function at the international level – such as a stable and predictable price of carbon – to catalytic investments that improve the risk–return equation.

In response to the increase in climate risks, WFP is setting up a multilateral, multi-year, replenishable fund called FoodSECuRE. The fund provides financial and programme support to community-centred action for building climate resilience. FoodSECuRE will offer financing for early action based on three- to six-month climate forecasts of harvest failures and other climate shocks, as well as predictable multi-year financing to support post-disaster work on building resilience. Other innovative financing mechanisms include the Rural Resilience Initiative and Africa Risk Capac-

ity projects. The latter is now a specialized agency of the African Union, which makes it possible to use pre-approved contingency funds in the event of severe natural disasters.

A series of financial institutions and facilities have also been established by UNFCCC, including the new Green Climate Fund that is to serve as a major channel of climate finance for mitigation and adaptation in developing countries. The World Bank Group is scaling up its efforts to support climate-smart investments. A notable success has been the US\$ 8 billion Climate Investment Funds, which are designed to provide scaled-up financing, through the multilateral development banks, to initiate transformational change and promote climate-resilient, low-carbon development. The Climate Investment Funds are leveraging approximately US\$ 55 billion for climate-resilient, low-carbon development in 63 countries. More than 80 additional countries have expressed interest in the Funds.

Science for decision-making

Since the 1970s, the UN system has facilitated the assessment and dissemination of the most up-to-date science and knowledge about climate change, its impacts and the range of options available to address it. Science provides Governments with firm evidence about the changing atmosphere, oceans, water cycle and cryosphere. It offers policy-relevant information about possible future climate scenarios, the resulting impacts on natural and human systems, and policy options for adaptation and mitigation.



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The Intergovernmental Panel on Climate Change (IPCC) published its first report on the warming of the global climate system in 1990. Established by WMO and UNEP, IPCC brings scientists, experts and Governments together to produce comprehensive climate change assessments every six or seven years. These assessments inform the UNFCCC negotiations and assist Governments to develop national climate policies. More targeted reports on specific subjects are also issued by IPCC, WMO, UNEP, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the UNESCO Intergovernmental Oceanographic Commission, other UN bodies and the World Bank Group, concerning, for example, climate trends, extreme events, GHG emissions and concentrations, health impacts, food security, oceans, sea levels and sea ice.

In addition to these reports and assessments, the UN facilitates international cooperation on scientific observation and research. The World Climate Research Programme and the Global Climate Observing System are each co-sponsored by several UN agencies. Through UN-led initiatives such as the Global Framework for Climate Services, science is incorporated into planning, policy and practice, thereby connecting Governments, scientists and other stakeholders. The impacts of higher atmospheric CO₂ concentrations on ocean acidification are assessed by IAEA, UNESCO and others, while agencies such as FAO assess the impacts on groundwater resources. There are many other examples.

The UN system further strengthens the climate-change knowledge base by building the capacities of researchers, with a particular focus on developing-country researchers and women. For example, WMO and its partners have facilitated the development of Regional Climate Outlook Forums where scientists from neighbouring countries meet and produce consensus seasonal climate forecasts. The UN also encourages the maintenance and diffusion of indigenous and local knowledge as a vital complement to modern science; indigenous peoples' holistic views of community and environment can serve as a major resource for adapting to climate change.

Low-carbon technologies

The rapid deployment of existing technologies and the speedy development of new ones are central to building efficient and low-carbon energy systems for resilient societies and sustainable economies. Policymakers have grappled with how best to facilitate technology transfer and encourage the necessary private and public contributions. Technology transfer must engage many different stakeholders: the private sector owns most of the relevant technologies as well as the operational know-how, while civil society and Governments know best their priority needs.

The UN system combines expertise and convening power to bring these stakeholders together and create effective partnerships. Its efforts to promote the development and transfer of mitigation and adaptation technologies are guided by the UNFCCC's Technology Mechanism, which consists of the Technology Executive Committee and the Climate Technology Centre and Network (CTCN). The Committee provides a forum for policymakers to recommend policy actions for supporting technology transfer. The CTCN is guided by a multi-stakeholder consortium led by UNEP and the United Nations Industrial Development Organization; it builds on the national technology needs assessments and the technology action plans led by UNEP and the Global Environment Facility.



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The UN is also establishing a technology bank and a supporting mechanism for science, technology and innovation designed to assist LDCs. As requested by the United Nations General Assembly, the Secretary-General will constitute a high-level panel of experts to carry out a feasibility study to examine the scope, functions, and institutional linkages with the UN and other organizational aspects of the technology bank. The bank is expected to be operational by 2017.



Solar panel used for lighting village houses, Sri Lanka. © Dominic Sansoni/The World Bank

The World Intellectual Property Organization (WIPO) works with other UN agencies to promote and facilitate the transfer of technology. It launched WIPO GREEN to help disseminate green technologies globally and provide an interactive marketplace for innovation and diffusion. So far, around 1 000 technologies have been uploaded to the site from around the world. The initiative WIPO GREEN, which is also a CTCN partner, is being implemented with support from over 40 public, civil society and private-sector partners.

Standardization is another enabler of technology transfer. Internationally agreed standards make innovative technological solutions more accessible and affordable for developing countries. To advance in this direction, both public and private sectors need to cooperate to produce a solid standardization agenda through international bodies, such as the International Telecommunications Union, the International Organization for Standardization and the International Electrotechnical Commission.

Education and training

Education and training are key drivers of economic and societal transformation. They provide people with the motivation and know-how to combat climate change locally, nationally and globally. Education and training cannot be achieved through one-off activities – a continuous process is essential.

Article 6 of UNFCCC calls on Governments to develop and implement programmes on education, training and public awareness. In response, the United Nations Alliance on Climate Change Education, Training and Public Awareness – a collaboration of 13 agencies – is promoting Article 6 objectives through both global and country-level action. The Alliance supports:



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- Formal education, including climate change in national and local school curricula and teacher training programmes;
- Non-formal education, such as professional skills development for managing climate finance, or training on how to conduct health vulnerability assessments;
- Strategic policy action, such as support for developing national climate-change learning strategies or integrating climate change into education policies and plans.

The One UN Climate Change Learning Partnership (UNCC:Learn) is a vehicle that helps to bring much-needed technical advice, grants and knowledge in these areas through the development and implementation of national climate-change learning strategies. In the Dominican Republic, UNCC:Learn helped to establish a national teacher training programme for climate change in which an initial 400 teachers took part, leading to an expanded programme that will reach 3 000 teachers nationwide.

Another example is the Massive Open Online Course on Climate Change hosted by the World Bank Group on an education platform. This free resource helps to reach out to large numbers of participants to share knowledge in a collaborative space, with interactions through social media.

UN Women, UNDP and other partners focus on training that empowers women to step up to climate-change challenges. In Viet Nam, sustained training of women in disaster management has prepared both women and men to respond to storms and floods. This has enabled communities to prepare their families and villages and evacuate vulnerable people before the arrival of storms, including through mapping and planning.

Capacity development

The UN system has been leading efforts to enhance the ability of Governments and communities to mitigate and adapt to climate change. Capacity-building has been part of the UNFCCC process since its inception, notably in the areas of national communications, GHG inventories, technology transfer, adaptation, and the design and implementation of National Adaptation Programmes of Action by LDCs and National Adaptation Plans by all developing countries.

The UNFCCC's Adaptation Fund finances adaptation projects and programmes in developing countries that are particularly vulnerable to the adverse effects of climate change. Over the past three years, the Fund has dedicated more than US\$ 225 million to increase climate resilience in 34 countries around the world. Governments can apply directly to the Adaptation Fund, but many Governments request UN agencies to work in partnership with them on building national capacity for climate adaptation. Capacity-building is also at the heart of the UN-REDD Programme described above, as well as the UNDP- and UNEP-supported National Adaptation Plan Global Support Programme, which is helping countries to integrate resilience measures into national planning and budgeting through the Least Developed Countries Fund.

The UN system is also actively engaged in climate-related capacity-building well beyond the UNFCCC process itself. In fact, practically all UN organizations place a high priority on capacity-development programmes linked to their sector or mandate. As a result, the UN system is



A woman fires a fuel-efficient stove made in the Rwanda camp for internally displaced people in North Darfur. Thousands of women at the camp are the beneficiaries of the Safe Access to Firewood and Alternative Energy (SAFE) project, run by WFP. UN Photo/Albert González Farran

helping to develop capacity on managing climate and health, climate and energy, climate and food security, climate and human mobility, and much more.

Partnerships with the private sector

Reducing emissions and adapting to climate change are not just issues for Governments – they involve literally everyone on the planet. To be effective and legitimate, climate policies must engage civil society organizations, community and youth groups, and individual citizens. They must also engage and empower the private sector. With support from coherent policies at the global and local levels, private-sector solutions and innovations can be scaled up and the business sector's unique skills can be brought to bear on the climate challenge.

In 2007, the United Nations Secretary-General launched Caring for Climate as a flagship initiative led by the United Nations Global Compact, UNEP and the UNFCCC secretariat. Caring for Climate recognizes that the private sector drives much of the innovation and investment needed for transitioning to a climate-friendly economy. It offers opportunities for business leaders to advance practical solutions and help shape public policy as well as public attitudes. By requiring annual reporting, it also provides a transparency and accountability framework. With endorsements from 370 companies, Caring for Climate is the largest business initiative on climate in the world. This initiative also collaborates with civil society organizations.



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The UNEP Finance Initiative advances the integration of climate change concerns into private-sector financial decision-making. It advises Governments and UNFCCC on the approaches and instruments best suited for channelling private finance from the conventional economy into the “climate economy”. Over 200 banks, insurers and fund managers have signed the UNEP Statement by Financial Institutions on the Environment and Sustainable Development.

The World Bank Group’s International Finance Corporation is leveraging the power of the private sector to advance innovative and viable climate solutions for developing countries and working to address policy obstacles to green growth. The Corporation has invested more than US\$ 11 billion in some 600 projects related to energy efficiency, renewable energy generation, clean production, sustainable agriculture, green buildings and climate change adaptation since 2005. The Corporation’s treasury has issued US\$ 3.4 billion in green bonds, and the Corporation has helped banks develop new green bond principles to help develop this asset class.

The International Labour Organization engages with workers’ and employers’ organizations to identify and realize the economic and environmental benefits of low-carbon pathways to development. Much of this work takes place within the framework of the Partnership for Action on Green Economy, which also includes UNEP, the United Nations Institute for Training and Research and the United Nations Industrial Development Organization.

The Rural Resilience Initiative launched by WFP and Oxfam America, with support from the re-insurance company Swiss Re, helps many poor, food-insecure households to access micro-insurance, savings and credit for the first time. Swiss Re played a key role in designing and implementing the Initiative's innovative risk transfer solution. The Rural Resilience Initiative gives people the choice of paying for a weather-index insurance package with their labour rather than with cash, which makes insurance more accessible to the most vulnerable.

Data and information for climate action

A strong, diverse and accessible base of data and information is essential for informing climate action. Many data providers are making significant progress in developing new technologies and processes for collecting, processing, integrating and analysing data to generate useful information for decision-making. Organizations of the UN provide standards and recommendations, capacity-building and technical assistance to support effective data systems.

Developing climate adaptation policies, for instance, requires access to downscaled climate projections, historical disaster data, climate hazard maps, health and infrastructure maps, land use and ecosystems data, and much more. United Nations and international organizations are collaborating to integrate these data via online portals using geographic information systems and other tools.

Agencies such as WMO, the World Health Organization, FAO, WFP, the Intergovernmental Oceanographic Commission of UNESCO and the United Nations Office for Disaster-risk Reduction have built partnerships to bring historical disaster-risk data together with climate and development information to support resilience-building, insurance systems and more. The United Nations Population Fund is using spatial analytics to integrate census and other population, housing and service data into climate adaptation planning, in concert with Governments, the private sector and non-governmental organizations. The United Nations Institute for Training and Research Operational Satellite Applications Programme delivers imagery analysis and satellite-based solutions for the UN and other relief organizations in the wake of human-induced natural disasters and other crises.

The United Nations University, UNHCR and IOM are also developing new approaches to data. They are leveraging evidence on climate-related migration, displacement and planned relocation, including through advances in big data analytics and enhanced knowledge on human mobility prompted by climate change. The United Nations Development Programme has focused on improving access to data for National Adaptation Plans and community-based adaptation plans as a means of ensuring transparency and empowering local stakeholders.

ISING TO THE CHALLENGE



Local community members participating in construction of graded terraces to control soil erosion in Nyabihu District, Rwanda.
© Rik Moors/One UN Rwanda

It is now widely agreed that more ambitious action on climate change is vital to human progress in the twenty-first century. At the same time, many other political, economic, social and environmental issues also demand immediate attention. And most people quite naturally find that the responsibilities and demands of daily life tend to absorb most of their energies. Nevertheless, climate change is the great leveller that encompasses and exacerbates nearly every other problem; taking early action and adopting solutions to climate change will contribute to solutions for many other challenges as well.

International concern about climate change has clearly reached a turning point. A massive effort by scientists over the past 20 years has made it possible to paint a clear picture of the possible pathways that the world can take to address the challenge of climate change. As a result, political momentum is building towards greater national and international action. National and local governments, businesses and civil society have all studied their options and taken actions to reduce GHG emissions and increase climate resilience.

The stage is set. The time for greater action is now. The entire UN system is fully engaged and prepared to help take the international response to climate change to a new level.



ANNEX: UNITED NATIONS SYSTEM MANDATES ON CLIMATE CHANGE

Caring for Climate is an initiative of the United Nations Global Compact, UNEP and the UN-FCCC secretariat for advancing the role of business in addressing climate change; it has been endorsed by nearly 400 companies from 60 countries.

The **Economic and Social Commission for Asia and the Pacific** provides the most comprehensive intergovernmental platform for regional dialogue and cooperation for sustainable development in Asia and the Pacific. It promotes low-carbon green growth as a key strategy for addressing climate change.

The **Food and Agriculture Organization of the United Nations** helps to achieve food security for all by making agriculture, forestry and fisheries more productive, sustainable and resilient in the face of climate change.

The **International Atomic Energy Agency** assists its member States in using nuclear science and technology for peaceful purposes; it also publishes reports on the potential role of nuclear energy in climate change mitigation and the use of nuclear science in assessing climate change impacts.

The **International Civil Aviation Organization's** climate mandate and environmental goal is to limit and reduce GHG emissions from international civil aviation.

The **International Fund for Agricultural Development** is committed to building up the climate resilience of smallholder farmers in developing countries through managing competing land-use systems, while at the same time reducing poverty, enhancing biodiversity, increasing yields and lowering emissions.

The **International Labour Organization** works with its tripartite constituency (workers, employers and Governments) to link eradication of poverty, sustainable development, climate change and green jobs.

The **International Maritime Organization** contributes to international efforts to reduce atmospheric pollution and address GHG emissions from international shipping, including through effective implementation of mandatory energy-efficiency measures for ships.

The **International Organization for Migration** has been developing policy, research and operational activities since the early 1990s, focused on human mobility, climate change, disaster-risk reduction and adaptation.

The **International Telecommunications Union** promotes the use of information and communications technologies (ICTs) to address climate change through technical standards, ICT-enabled applications and radiocommunications for climate monitoring.

Through international cooperation, the **Intergovernmental Oceanographic Commission** aspires to help its Member states to increase resilience to climate change and variability and enhance safety, efficiency and effectiveness of all ocean-based activities through scientifically-founded services, adaptation and mitigation strategies.

The **United Nations Convention to Combat Desertification** builds the resilience of ecosystems and communities by fostering adaptation at the landscape level based on sustainable land-management practices.

The **United Nations Development Programme**, recognizing that many drivers of poverty are intertwined with climate change, provides programming and policy support that addresses the impacts of climate change, putting countries on the path towards low-emissions and climate-resilient development.

The **United Nations Educational, Scientific and Cultural Organization** enhances and applies the climate change knowledge base for building green societies through climate change education, science, culture and communication.

The **United Nations Environment Programme** supports climate resilience, low-emission pathways, ecosystem-based adaptation, clean and renewable energy and technologies, and greater awareness of climate change science for policymaking and action.

The **United Nations High Commissioner for Refugees** leverages evidence and enhances knowledge on and understanding of human mobility prompted by climate change, including for the protection of the most vulnerable populations.

The **United Nations Institute for Training and Research** empowers people, organizations and countries to respond to the challenges of global climatic change through the design and delivery of individual learning, backed by strategic advice and capacity development for national education and training institutions.

The **United Nations Office for the Coordination of Humanitarian Affairs** brings together humanitarian actors to ensure a coherent response to climate-related emergencies and disasters.

The **United Nations Population Fund** supports countries in integrating population dynamics and data into climate action and helps build the resilience of individuals and communities, including through achieving universal access to sexual and reproductive health and gender equality and women's empowerment.

UN Women works with partners to ensure gender-responsive climate action through norm-setting, policies and programmes. It helps strengthen women's capacity to cope with climate change impacts.

The **World Bank Group** has two ambitious goals: end extreme poverty within a generation and boost shared prosperity. It works to leverage both public and private sources of climate finance to support climate-smart policies and investments and to help countries and businesses adapt to a changing climate.

The **World Food Programme** is the world's largest humanitarian agency fighting hunger. Its climate-change focus is on building the resilience of the most food-insecure people and countries against increasing climate risks.

The **World Health Organization** is the lead health agency of the United Nations. It provides evidence, technical guidance and pilots approaches to strengthen health resilience to climate risks, and to gain health benefits from climate mitigation.

The **World Meteorological Organization** is the UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources.

