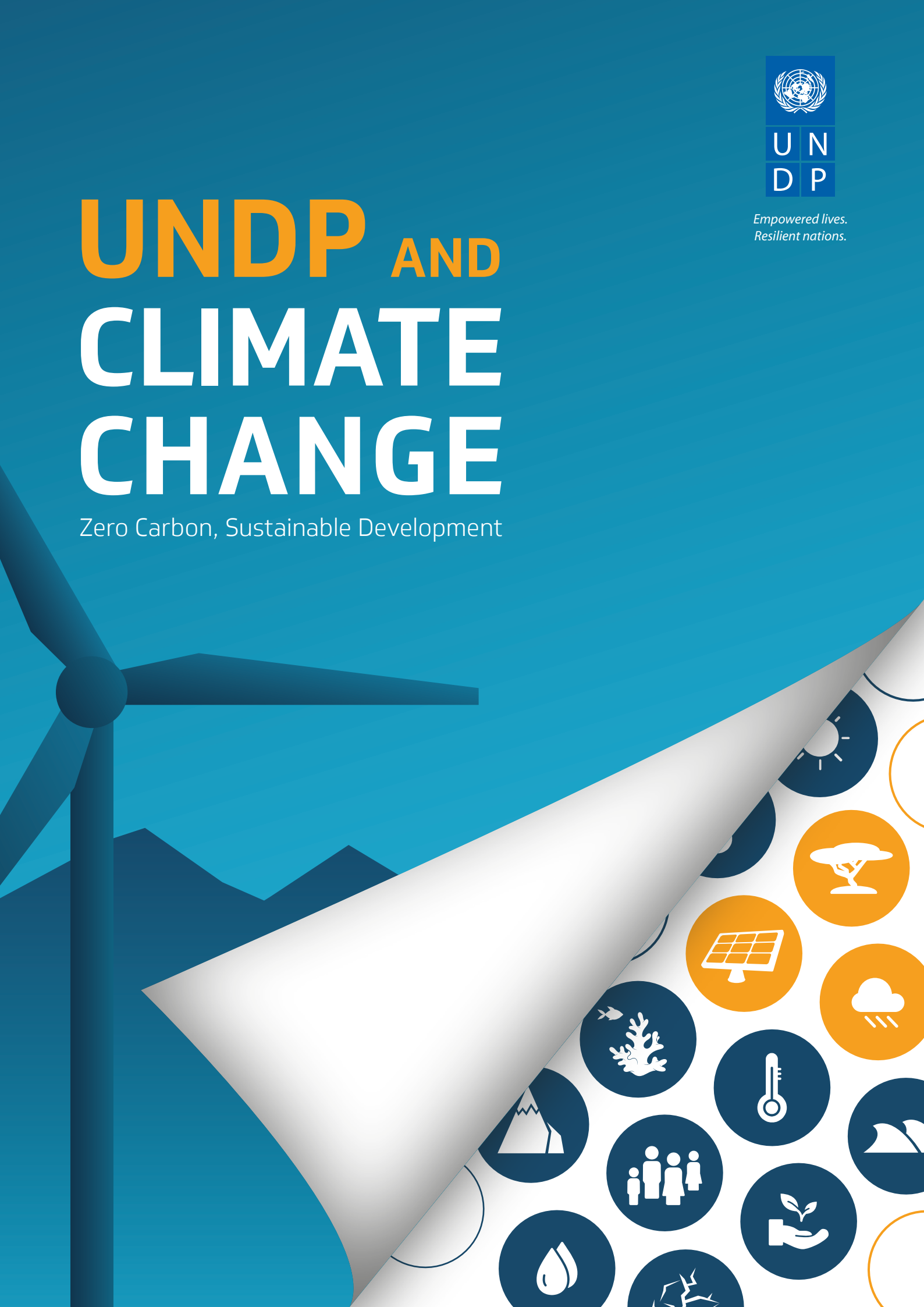
Empowered lives.
Resilient nations.

UNDP AND CLIMATE CHANGE

Zero Carbon, Sustainable Development



ACKNOWLEDGEMENTS

This report was coordinated and prepared by Sandra Schuster and Kalyan Keo, and with guidance provided by Rebecca Carman, Cassie Flynn and Stephen Gold. Carl Mercer and Nicholas Ramos provided communications and logistics respectively. Corey Sobel was editor of the report.

Input and peer review were provided by the following UNDP colleagues: Marcel Alers; Margarita Arguelles; Thomas Beloe; Yamil Bonduki; Jazmin Burgess; Daniela Carrington; Cayetano Casado; Verania Chao; Michael Comstock; Ana Maria Currea; Aliou Dia; Gordon Johnson; Dearbhla Keegan; Jan Kellett; Kishan Khoday; Antje Kraft; Pradeep Kurukulasuriya; Joan Manda; Jessie Mee; Matilde Mordt; Daisy Mukarakate; Nataly Olofinskaya; Marina Olshanskaya; Marta Ortega Baldonedo; Claudia Ortiz; Clea Paz; Angelika Planitz; Estefania Samper; Angelica Shamerina; Jen Stephens; and Allison Towle, with kind assistance from personnel across a range of UNDP regional and country offices.

Design was done by Phoenix Design Aid A/S.

CONTENTS

FOREWORD

Climate change is one of the defining challenges of our time. Over the past 100 years, fourteen of the hottest summers have occurred since 2000 and the world is already facing climate change-induced impacts, such as rising sea levels, changing rainfall patterns, increased droughts, and more erratic storms. These stresses have exacerbated existing economic, political and humanitarian issues around the world. Hard-won gains that have helped communities increase access to food, health, education and other needs are at risk. In particular, for the poorest and most vulnerable, climate change can undo decades of development.

However, the global response to climate change has never been stronger. 2015 has ushered in a new era of action on climate change and development. The outcomes of the Sendai World Conference on Disaster Risk Reduction, the Financing for Development Conference in Addis Ababa, the approval of the Sustainable Development Goals, and the forthcoming COP21 of the United Nations Framework Convention on Climate Change (UNFCCC) present new opportunities for countries to transition their economies toward zero-carbon, sustainable development.

The challenge before us is to turn the bold words of these global agreements into concrete action on the ground. UNDP, with a presence in over 177 countries and territories and a portfolio of mitigation and adaptation projects of over US $2.3 billion, is committed to doing all it can to help countries bring their visions to life. UNDP will do this by providing ambitious and comprehensive support to scale up proven solutions and to pursue new climate change action that enhances resilience and spurs zero carbon development pathways. For UNDP this means responding to climate change under the umbrella of sustainable development. This is achieved through a broad range of adaptation and mitigation development actions, including de-risking financing, and supporting national partners to adopt practices such as ecosystem based approaches and sustainable forestry.

Our vision is driven by inclusivity and equity, ensuring action for all countries, and with recognition that it is the Least Developed Countries and Small Island Developing States that are the most vulnerable to climate impacts and need the greatest support to adapt. Working together with national and local partners, support will likewise be targeted for groups within countries most at risk and who have the potential to be agents of change, including women, girls and youth.

This infographic report provides a snapshot of the breadth and depth of UNDP's climate change work in the hope that our experiences and expertise can be beneficial to countries as they deliver their climate change and development goals in 2016 and beyond. The portfolio is based on UNDP's role as an implementing agency of Global Environment Facility-managed funds, an implementing entity of the Adaptation Fund, and a partner in numerous multilateral and bilateral programmes. UNDP is also an accredited entity of the Green Climate Fund.

UNDP, with decades of experience at the global, regional, national and subnational levels, stands ready to support countries to deliver ambitious action on the ground and work toward a future that is inclusive and sustainable for all.

Magdy Martínez-Solimán
Director, Bureau for Policy and Programme Support

INTRODUCTION

UNDP'S VISION IS ONE WHERE ALL DEVELOPING COUNTRIES CAN ACHIEVE A ZERO CARBON AND SUSTAINABLE FUTURE.

This vision requires support for all countries to transition toward decarbonization and receive dedicated attention for adaptation. The transition will be inclusive and equitable, and will support local people to be agents of change, regardless of gender or status. In this way, it will secure sustainable development at the national level and raise the world's collective ambition for climate action.

TO ACHIEVE THIS VISION, COUNTRIES MUST RAPIDLY TRANSFORM THEIR ECONOMIES, SUCH AS BY GREENING THEIR ENERGY, INFRASTRUCTURE, AGRICULTURE AND OTHER SECTORS.

This requires large volumes of capital. The UN Conference on Trade and Development (UNCTAD) estimates that the total investment needs for Sustainable Development Goal (SDG)-related sectors (including those related to climate change) in developing countries alone range from US$3.3-$4.5 trillion annually. Based on today's level of public and private investment, developing countries will still need to bridge an annual funding shortfall of as much as $2.5 trillion from 2015-2030. The ambitious shift toward sustainable and risk-informed development not only requires scaled up and stable levels of finance from international, national, public and private sources, but also an effective environment made up of sound policies, strong institutions and adequate budgetary frameworks. This includes leveraging scarce public finance to attract private investment.

DRAWING ON DECADES OF EXPERIENCE IN ACCESSING CLIMATE AND ENVIRONMENTAL FINANCE, UNDP SUPPORTS ACTION AT ALL LEVELS SO THAT COUNTRIES HAVE THE RESOURCES THEY NEED TO TRANSITION TOWARD ZERO-CARBON AND CLIMATE RESILIENT DEVELOPMENT.

Climate change and associated finance are at the heart of UNDP's Strategic Plan, and our portfolio supports opportunities for countries to take action under the United Nations Framework Convention on Climate Change (UNFCCC) process. In partnership with the Global Environment Facility (GEF), Adaptation Fund (AF), as well as other multilateral and bilateral partners, UNDP has provided decades of strategic assistance in catalyzing and leveraging climate investment into climate policies, technologies, practices and enterprises.

A STRONG FOUNDATION FROM WHICH UNDP WILL ACHIEVE ITS VISION.

From Nationally Appropriate Mitigation Actions (NAMAs), National Adaptation Plans (NAPs), climate finance readiness and other programmes, UNDP has helped countries access and deliver over $2.3 billion in mitigation and adaptation initiatives. UNDP works across all regions—over 130 developing countries, including all 48 Least Developed Countries (LDCs) and 39 Small Island Developing States (SIDS). UNDP also works with vulnerable populations within countries, including women, girls, youth, indigenous people and remote communities.

UNDP WILL CONTINUE TO COLLABORATE WITH PARTNERS TO EXPAND THE WORK ALREADY UNDERWAY AND DEVELOP NEW AND INNOVATIVE APPROACHES TO ADDRESS CLIMATE CHANGE.

The organization continues to promote an integrated approach to achieve sustainable development that tackles the connected issues of multidimensional poverty, inequality and exclusion, and sustainability, while enhancing knowledge and skills to reduce risks and sustain development gains. By building on the programmes and initiatives described in this report, UNDP aims to scale up support so that countries can achieve transformational change.

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INTENDED NATIONALLY DETERMINED CONTRIBUTIONS (INDCs)

WHAT IS AN INDC?

Globally, countries have agreed to publicly outline the post-2020 climate actions they intend to take under a new international agreement to be reached in Paris in December 2015. These are referred to as Intended Nationally Determined Contributions (INDCs).

UNDP SUPPORT FOR INDCs:

UNDP is a key partner to countries in developing and submitting their INDCs. UNDP has provided INDC financial and/or technical support to 43 developing countries; developed a guidebook on 'Designing and Preparing INDCs' with the World Resources Institute; and organized 12 INDC regional dialogues, global forums and sub-regional training workshops in partnership with the UNFCCC Secretariat and other partners to exchange lessons learned and provide guidance on INDC preparation. Through these activities, UNDP reached over 1,000 participants from 130 countries.

Ambitious Intended Nationally-Determined Contributions pave the way toward bold climate change action on the ground.

2 DEGREES — Global goal: to limit average temperature rise to less than 2 degrees Celsius above pre-industrial levels.

2.7 DEGREES — UNFCCC estimate of temperature rise based on pledges in INDCs submitted by 1 October 2015.

86% — 86% of total global green-house gas (GHG) emissions covered by the INDCs submitted by 1 October 2015.

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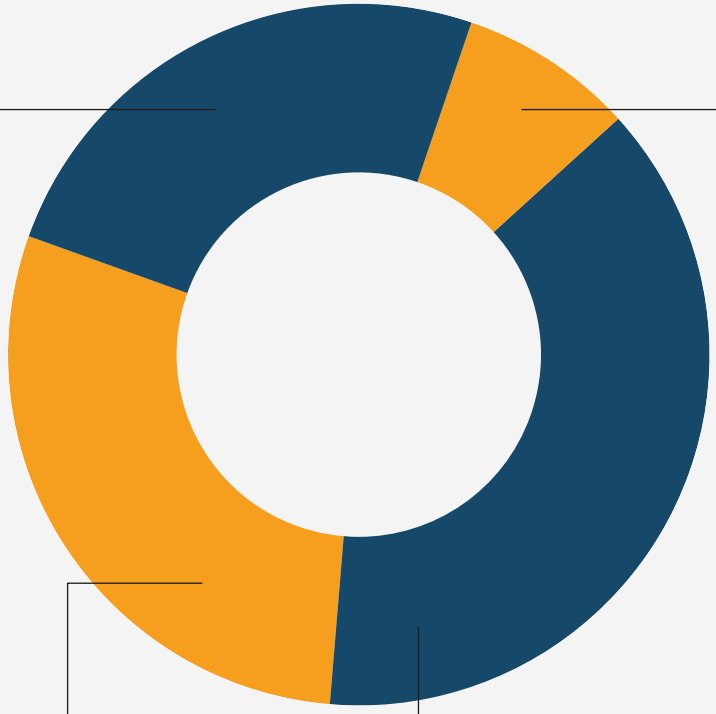
ACTION AREAS GLOBALLY

Since 2008, UNDP has supported more than 140 countries to access more than $2.3 billion in grant finance to develop and implement climate change initiatives.

140 COUNTRIES

$2.3 BILLION

(based on estimates from November 2015)



25%

$555 MILLION

FORESTS

- Founding partner of the UN-REDD Programme
- Implementing GEF-funded projects in sustainable forest management
- Delivery partner for the World Bank's Forest Carbon Partnership Facility

29%

$643 MILLION

MITIGATION

- 90 countries across all 5 regions

38%

$853 MILLION

ADAPTATION

- Largest UN agency in adaptation programming
- 115 countries across all 5 regions

8%

$176 MILLION

CROSS-CUTTING

- Capacity building to plan for, access and deliver climate finance, and monitor, report and verify
- Gender-responsive climate change actions
- Indigenous and local community support
- Sustainable forest management and ecosystems protection
- Policy support to respond to UNFCCC decisions
- Climate risk management

PHASING OUT OZONE DEPLETING SUBSTANCES

UNDP's **Montreal Protocol** programme has assisted 120 partner countries access $690.6 million in funding from the Multilateral Fund for the Implementation of the Montreal Protocol (for Article 5 developing countries) and $42.5 million from the Global Environment Facility (for non-Article 5 countries) to eliminate ozone depleting chemicals. This has resulted in the elimination of 67,870 tonnes of ODS while simultaneously reducing 5.08 billion tonnes of CO_2-equivalent greenhouse gas emissions. As these contributions are implemented in parallel to UNDP's efforts in climate mitigation, these figures are not included in this report.

ACTION AREAS REGIONALLY

LATIN AMERICA & CARIBBEAN

- Forest conservation, community-based forest management, deforestation-free commodities and REDD+ readiness/early implementation
- Coastal, marine and freshwater management
- Land-use planning
- Adaptation to climate change
- Engaging the private sector on climate change mitigation opportunities
- South-South collaboration
- Climate risk management

ARAB STATES

- Enhancing community resilience and food/water security
- New national climate change policies and strategies
- Early warning systems for climate and disaster risks
- Frameworks to de-risk scaled up renewable energy investments
- Development of Energy Index to rank countries on low carbon pathways
- National centers of excellence on low-carbon solutions and energy efficiency in cities
- Solar energy solutions for the poor and communities displaced by conflict
- Regional platforms to implement SDG 7 on energy and SDG 13 on climate change

AFRICA

- Climate resilient livelihoods
- Enhancing food security
- Access to climate information and early warning systems
- Disaster risk management and resilience
- Sustainable energy for poverty reduction

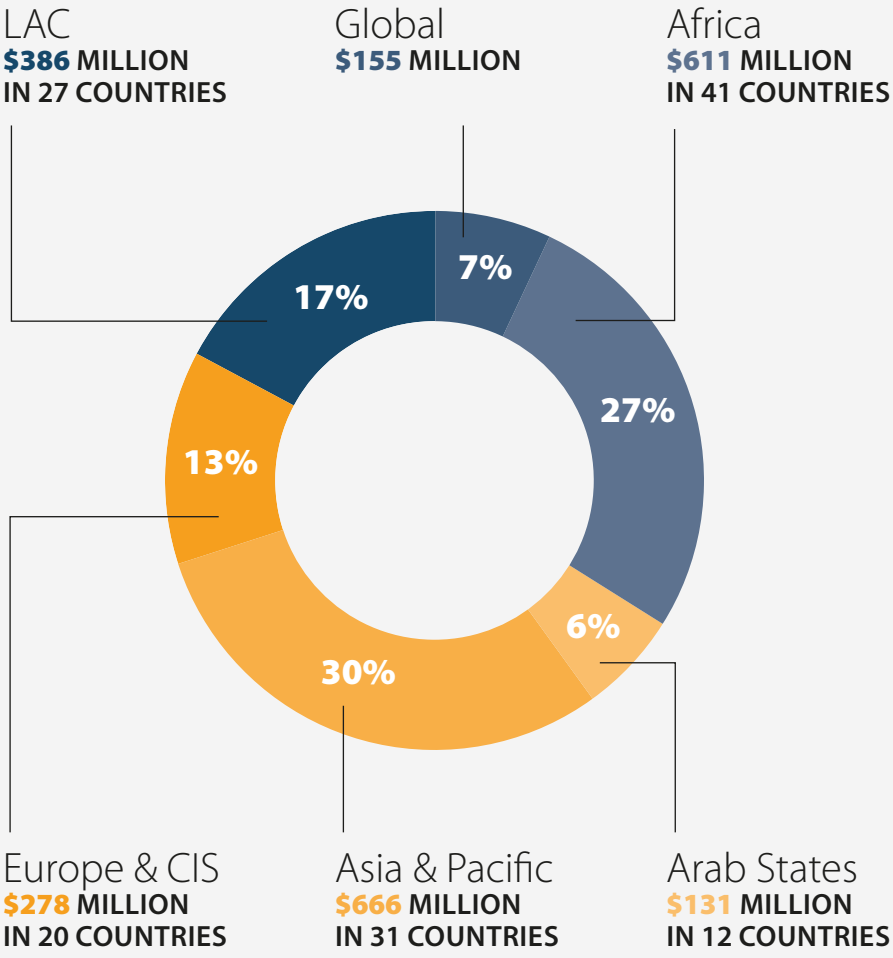
EUROPE & COMMONWEALTH OF INDEPENDENT STATES (ECIS)

- Supporting flood and drought risk management
- Energy efficiency
- Sustainable forest and pasture management
- Peatland management
- Development of low-emission climate resilient strategies and NAMAs
- Support and policy advice to all the regions on the UNFCCC negotiations

ASIA & PACIFIC

- Assisted 14 SIDS in the Pacific to adapt to flooding, drought and other extreme events
- Loss and damage databases
- Integration of climate resilient and environmentally sustainable policies and budgets into development plans, including support to REDD+ readiness in 17 partner countries
- Low-carbon development pathways progressed in the region

UNDP remains the largest service provider in the UN system supporting countries on climate change adaptation and mitigation.



UNDP'S SUPPORT ON ADAPTATION

80%
of people displaced by climate change are women

1.2 BILLION
people rely on agro-farming systems

6 SIGNATURE PROGRAMMES

11 SECTORS

115 COUNTRIES

$853 MILLION PORTFOLIO

23 MILLION:
direct beneficiaries

18 MILLION:
improved access to climate information

3.2 MILLION:
benefit from early warning systems[1]

CLIMATE RISK MANAGEMENT

$143
million (2005-14)

8%
of total Disaster Risk Reduction expenditure[35]

Targets women and communities

54%
of GEF-funded adaptation projects include disaster risk reduction (DRR) components

INDIGENOUS PEOPLE AND LOCAL COMMUNITIES

125 COUNTRIES

70,000,000
indigenous people depend on forests for their livelihoods

19,000
community based projects

7,600 of which have protected

12,900,000 ha of forests

13 CLIMATE ACTION

SUSTAINABLE DEVELOPMENT GOALS

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UNDP'S SUPPORT ON MITIGATION

12%-15%
of global GHG emissions are from deforestation

13,000,000 ha
of forest are cleared annually

3 SIGNATURE PROGRAMMES

8 SECTORS

90 COUNTRIES

$643 MILLION PORTFOLIO

1,061
ENERGY PROJECTS
OVER PAST 3.5 YEARS

FORESTS

64 countries supported on REDD+

$555 million portfolio

23 REDD+
National Programmes supported through the UN-REDD Programme

6 PILOTS
for Community-Based REDD+

547,925 KM²
of protected areas in Asia-Pacific strengthened/created through GEF-financed projects

350,000,000
rural people reside in or near forests

ENERGY ACCESS

363 OFF-GRID PROJECTS

209 ON-GRID PROJECTS

102 MINI-GRID SOLUTIONS

71 WOMEN
were trained to provide solar lighting to more than

22,739 BENEFICIARIES IN

3,778 HOUSEHOLDS IN

53 VILLAGES IN AFRICA AND ASIA

7 AFFORDABLE AND CLEAN ENERGY

SUSTAINABLE DEVELOPMENT GOALS

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OUR PARTNERSHIPS

UNDP embraces a partnership approach to delivering climate actions at the local, national, regional and global levels. In addition to working across many key government ministries (such as environment, finance, planning, energy and agriculture), we also work with indigenous communities, communities, civil society and the private sector. In addition, UNDP also partners with other UN agencies, International Financial Institutions (IFIs), financial instruments of global conventions, donors and development agencies, and academia and think tanks, to the extent possible, as illustrated below.

UN PARTNERS

FAO

ICAO

IMO

UNEP and UNEP-DTU

UNFCCC

UNICEF

UNITAR

WMO

PRIVATE SECTOR

Atmosfair

Differ

Dubai Carbon Center of Excellence

Saudi Energy Efficiency Center

IFIS/BANKS

ADB

AfDB

IADB

KfW

World Bank

FINANCIAL INSTRUMENTS OF GLOBAL CONVENTIONS

Adaptation Fund

GEF

Green Climate Fund

DEVELOPMENT AGENCIES

DfID

GIZ

SEA

SNV

USAID/EPA

BILATERAL DONORS

Australia

Austria

Belgium

Canada

Denmark

Finland

France

Germany

Japan

Norway

Spain

Sweden

Switzerland

UK

United States

European Commission

OPEC Fund for International Development

INTERGOVERNMENTAL & CIVIL SOCIETY

Asian Institute of Technology

CCCCC

Centre for Clear Air Policy

Ecofys

Energy Research Centre of the Netherlands

Global Framework for Climate Services

Global Water Partnership

Grantham Research Institute

IEA

Institute for Global Environmental Strategies (IGES)

International Partnership on Mitigation and MRV

International Research Institute for Climate and Society (Columbia University)

IUCN

LEDS Global Partnership

New Climate Institute

ODI

OECD

Overseas Environmental Cooperation Center (OECC)

RIMES

WIN World Network of Indigenous and Local Community Land and Sea Managers

World Resources Institute


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AFRICA

VULNERABILITY

388.8

388.8 million live on less than $1.90 a day.[1]

214

214 million are undernourished.[4]

22.3%

22.3% live on degraded land (2010).[5]

888 ▸ 1,349

Population increase (in millions) from 2013 to 2030.[5]

CLIMATE CHANGE IMPACTS

AGRICULTURAL LOSSES

18% for southern Africa

22% for sub-Saharan Africa

+30% South Africa and Zimbabwe (by mid-century[10])

DROUGHT AFFECTED

The top 10 countries with the highest percentage of their populations affected by drought are in Africa.[2]

DEATHS FROM MALARIA

429,000 to 772,000 deaths from malaria in Africa in 2010, a trend that is climate driven.[10]

INCREASE OF SEVERE STUNTING IN CHLIDREN

31% - 55% increased prevalence of severe stunting in children.[10]

NATURAL DISASTERS

Over 711 natural disasters killed 40,000+ people and affected 137+ MILLION from 2005 to 2014.[3]

REDUCED WATER AVAILABILITY

Annual temperature increases and reductions in precipitation will reduce water availability, exacerbate the vulnerability of agricultural systems and increase climate-relevant health impacts.[10]

ADAPTATION TO CLIMATE CHANGE

Adaptation to climate change estimated at $60 BILLION a year by 2030.[10]

MITIGATION OPPORTUNITIES

Forested area[5]

28.3%
(of total land area 2011)

-10.8%
change (1990/2011)

Primary energy supply (2012)[6]

38.7%
fossil fuel

61.3%
renewable and alternative sources

Carbon dioxide emissions per capita (2010)[5]

0.9 TONNES

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KEY ACHIEVEMENTS IN UNDP'S SUPPORT TO ADDRESS CLIMATE CHANGE

NATIONAL POLICIES AND PROCESSES

- Eight countries were supported to prepare INDCs.
- **DRC, Ghana, Kenya, Uganda and Zambia** have undertaken substantial capacity building efforts to institutionalize and streamline the process of reporting GHG emissions on a more regular basis under the Low Emission Capacity Building Programme (LECB). In addition, **DRC, Uganda and Zambia** are now being supported to frame Nationally Appropriate Mitigation Actions (NAMAs) within overarching low-emission development strategies.
- In **Ethiopia**, the Africa Adaptation Programme contributed to the development of the Ethiopian Plan of Action to Adapt to Climate Change and the Climate Resilient Green Economy Strategy. Baseline studies were completed across 8 sectors and 11 geographic regions on climate change vulnerability and adaptation capacity, adaptation options/costs, which were then used to inform 9 regional state adaptation plans. More than 300 parliamentarians and heads of relevant government departments and bureaus were engaged.

FORESTS

- **Central African** Forests Initiative: This newly-launched partnership involves donors, six partner countries **(Cameroon, CAR, Congo-Brazzaville, DRC, Equatorial Guinea, and Gabon)**, the United Nations and international agencies, namely UNDP, FAO and the World Bank. The objective of the initiative is to slow down and halt deforestation and forest degradation in the Central African region, with a view to mitigating GHG emissions from land use change and secure the multiple ecological and development benefits provided by forests.
- The **DRC and Nigeria** are two of six countries piloting Community-Based REDD+ in a partnership between the UN's Reducing Emissions from Deforestation and Forest Degradation (UN-REDD) Programme and the UNDP-GEF Small Grants Programme. The purpose of this partnership is to deliver grants directly to indigenous peoples and forest communities to fully engage in the design, implementation and monitoring of REDD+ readiness activities, as well as to develop experiences, lessons and recommendations at the local level that can feed into national REDD+ processes.
- Women have been actively engaged as members of village community development committees for the protection of **Chad's** Manda National Park, and have contributed to local development plans and defended their interests in natural resource management.

CLIMATE ADAPTATION AND FOOD SECURITY

- Agricultural decision-making in **Burkina Faso** and **Mozambique** is now informed through improved automatic weather station coverage and trained agronomists, agricultural extension workers, community radio staff and meteorologists.
- Regional climate information and early warning systems (EWS) have been enhanced through a partnership with the International Research Institute for Climate and Society, providing informed and timely decision-making.
- Indices for livestock and crops developed in **Burkina Faso** and **Niger** for implementation of weather index insurance schemes aimed at protecting small holder farmers against agricultural loss caused by extreme weather events.
- Adaptation planning has been improved in **Burkina Faso, Malawi** and **Tanzania** through the development of national and local adaptation plans that are aligned with planning and budgeting frameworks through participatory processes involving rural communities.
- Food security risk has been reduced in **Malawi** via the implementation of agroforestry as an adaptation measure, with communities planting multipurpose trees alongside food crops.
- Regional climate products and services have been improved by training experts and equipping the two regional climate centers in **Africa**—AGHRYMET and ACMAD—based in **Niamey, Niger**.

DISASTER RISK MANAGEMENT AND CLIMATE RESILIENCE

- EWSs have been enhanced and **Intergovernmental Authority on Development (IGAD)** member countries have been assisted in downscaling predictions and improving mitigation strategies. This was achieved by the development of an integrated EWS framework for the **IGAD region**.
- Resilience measures and investments have been identified and prioritized in **Chad, Mali, Mauritania, Niger** and **Senegal**.
- Post disaster needs assessment guidelines have been adopted across 26 **African** countries.

SUSTAINABLE ENERGY ACCESS

- Leadership in the "White Paper on Universal Access to Modern Energy Services" was aligned with Sustainable Energy for All (SE4ALL) goals, providing a harmonized vision for **Central Africa**.

- 25 regional private sector energy projects have been prioritized for investment through the publication of the Investment Opportunity Brief (IOB), supporting the Peace and Security Framework (PSC) in the **Great Lakes Region**.
- Solar power was installed in rural communities in **Mali** (where less than 1 percent of the rural population has electricity), benefiting 30,000 people.[7]
- Solar-powered heating systems and lightning appliances were introduced to 88 **Botswana** villages that are off the country's main electricity grid (targeting 65,000 households).
- The Regional Energy Programme is providing a wide range of energy services to over 3.5 million rural people in **13 countries** in West Africa using renewable energy sources such as biogas, solar, hydropower and biofuels.

LOW-CARBON DEVELOPMENT PATHWAYS

- A feed-in tariff fund to promote rooftop solar photovoltaic (PV) was developed in **Mauritius**. The feed-in tariff scheme pays a premium price to commercial and residential investors in solar PV, generating a sufficient return to attract investment. It has been fully subscribed.
- To assist **Seychelles** to meet its 2020 target of generating 20 percent of its energy from renewable sources, UNDP is supporting the increased use of grid-connected PV systems. Interventions include awareness raising, a PV rebate scheme for homeowners and small businesses, and a net-metering tariff. The installed capacity target of 1.3 MWp is likely to be significantly exceeded.
- MDG Carbon assisted the governments of **The Gambia** and **Namibia** to develop Nationally Appropriate Mitigation Actions (NAMAs) that facilitate transformative change in the energy sector. This was done by introducing mini-grids that increase the proportion of renewable energy in the energy mix, strengthening public–private partnerships, increasing and improving access to electricity and fueling gender-sensitive sustainable growth in rural and remote areas of the country.

GENDER

- **Kenya's** Clean Household Energy NAMA, designed under the LECB programme, is providing access to cleaner cookstoves and lighting by empowering women and girls. Through a series of training and practical demonstrations, local women are taught installation and repair of improved cookstoves and solar LED lighting.
- The 'Empowering Rural Women to Create Off-Grid Solar Electrification' project supported the training and empowerment of 71 women who have been able to provide electricity to 53 villages, providing lighting to more than 22,739 beneficiaries in over 3,778 households[8] in Africa's and Asia's poorest countries.
- 25 green entrepreneur from **Ethiopia, Kenya, Rwanda, South Sudan, Tanzania,** and **Uganda,** were supported to participate in agribusiness training. This was done in partnership with the Government of Israel, the Golda Meir Mount Carmel International Training Center, and the Center for International Agricultural Development Cooperation to help support and increase women's access to emerging employment and entrepreneurship opportunities.

ETHIOPIA

CUTTING POVERTY BY CULTIVATING AGRICULTURE

Agriculture accounts for nearly half the economy and over 80 percent of employment in Ethiopia. In partnership with the Ministry of Agriculture and the GEF, UNDP helped reduce vulnerability to climate change and erratic rainfall by:

- Introducing simple plastic rain gauges that improved national forecasts and allowed farmers to track weather patterns and plan for droughts.
- Encouraging farmers to re-adopt inexpensive and environmentally-friendly farming practices. Over 100,000 farmers now practice the methods and were also provided with drought-resistant seeds.
- Formulating a national growth and transformation plan with the government to double agricultural output and strengthen links to markets. An Agricultural Transformation Agency was established to guide the implementation.
- Establishing the Ethiopian Commodity Exchange in 2012, the first of its kind in sub-Saharan Africa. The exchange connects buyers, sellers, distributors and exporters who trade agricultural products. Trading volumes rose by 23 percent and earnings grew by 31 percent compared to 2011 (as collected by the Ministry of Trade).

GHANA

NEW REFRIGERATORS SAVE ENERGY FOR THOUSANDS OF HOUSEHOLDS

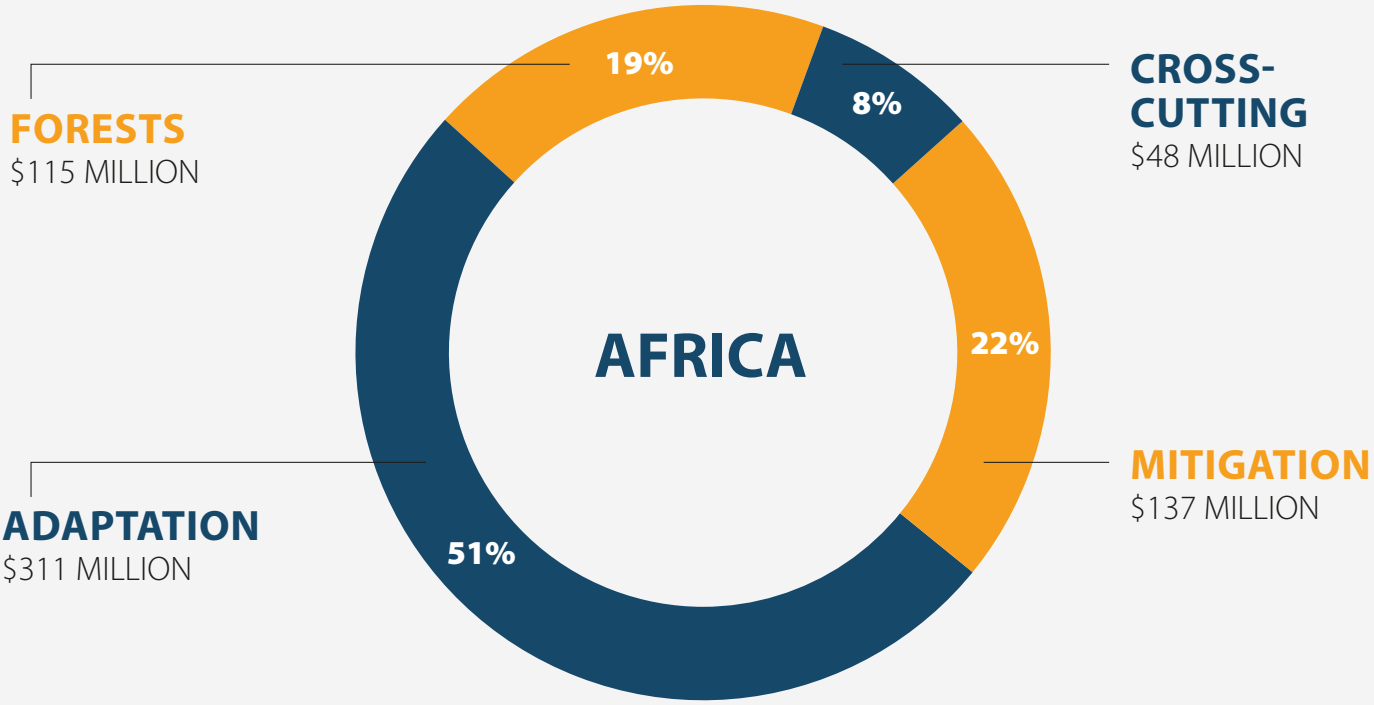
To reduce Ghana's carbon emissions and ozone-depleting substances related to energy, the Government, in collaboration with UNDP, launched a "rebate and turn in" programme, which encourages consumers to exchange their old refrigerators for new, efficient models at a discounted price. This resulted in:

- More than 5,200 old, energy inefficient appliances being replaced in households across the country, with 15,000 expected to be replaced by the end of 2015.

- Ghanaian law now requires that all new refrigerators carry official energy efficiency labels. At the same time, a ban on the import of used refrigerating appliances in 2013 prevented over 260,000 inefficient units from entering the country.
- Annual energy savings achieved are enough to power more than 11,000 households for a year.

UNDP also continues to support the Government to promote the country's transition towards a green, low-carbon and climate resilient society. As part of the UN's Sustainable Energy for All (SE4All) initiative, Ghana has embarked on a UNDP-supported action plan to provide universal energy access, improve energy efficiency and increase renewable energy for all Ghanaians by 2030.

UNDP has invested $611 million in 41 countries across the African region, supporting:



CHALLENGES AND OPPORTUNITIES

- Most African governments are initiating governance systems for adaptation. In particular, LDCs have initiated comprehensive adaptation planning processes by developing National Adaptation Programmes of Action (NAPAs).[10]
- However, the development of national and local adaptation plans has not been accompanied by implementation budgets; finance needs to be redirected to enable implementation.
- Effective national frameworks must include multiple institutions that cover all aspects of climate change and enable ownership and accountability.
- The capture of climate data is important but lacks funding.
- Even though mitigation is a lower priority than adaptation in many African countries, there are many opportunities for mitigation actions; especially encouraging the scaling up of renewable energy. There is keen interest from donors to support mitigation efforts in the African region, especially efforts in LDCs and SIDS. Many regional and subregional actions are underway.

SCALING-UP ACTION

- National climate change investment plans and monitoring and evaluation frameworks assist in the prioritization of climate actions and bring together public, private and civil society partners to deliver climate investments.
- Commercial weather index insurance is helping poor rural farmers avoid significant losses and provides a good example of mobilizing private sector investments.
- The development of more affordable WMO-certified weather stations can improve government capacities to participate in larger climate infrastructure programmes, complement international assistance and attain higher quality/more reliable weather and climate information.
- The systematic documentation and archiving of national GHG inventory reports in DRC, Kenya, Uganda and Zambia has encouraged the sustainability and transparency of emissions monitoring.
- Ghana has launched an online climate change database under its LECB project that captures all GHG emissions data and also includes a dashboard of progress on national climate policies and measures, as well as provides a registry of all past and present climate initiatives.
- Subnational strategies have integrated adaptation and mitigation for low-carbon climate resilient development (as is being done in Delta State, Nigeria).
- The South African government has reduced investment risks for private sector investors in wind energy using UNDP's de-risking framework.

THE FUTURE AND ON-GOING EFFORTS

- A regional initiative is planned in partnership with the African Union to enhance disaster risk investment by the public and private sectors. A planned regional study in eight countries will provide recommendations for more efficient and effective resource allocation for DRR.
- 14 countries are supported in obtaining access to climate information and EWS in partnership with the LDCF.
- Support provided for the development of 10 National Communications and 4 Biennial Update Reports.
- Support to strengthen the sharing of regional climate information and EWSs has begun. A mapping of climate information-sharing mechanisms will be conducted in ECOWAS and ECCAS and later rolled out to other regional economic communities.
- Six countries are being supported via the LECB Programme to design nationally appropriate mitigation actions in priority sectors (energy, transport, waste and agriculture), low-emission development strategies, and INDCs.
- Four countries are supported by the Canada-UNDP Climate Change Adaptation Facility to strengthen climate resilient approaches to agriculture and water management, with an emphasis on gender-sensitive approaches.
- A new program in partnership with the GEF aims to promote the sustainable management and resilience of ecosystems and their different services as a means to address food insecurity.

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ARAB STATES

VULNERABILITY

69

69 million live on less than $2 a day.[9]

33

33 million are undernourished.[16]

24.3%

24.3% live on degraded land (2010).[5]

8

8 of the 10 most water-stressed countries in the world are Arab states and 87% of the region is desert.[17]

366 ▸ 481

Population increase (in millions) from 2013 to 2030.[5]

CLIMATE CHANGE IMPACTS

TEMPERATURE INCREASE

Annual average temperatures in the Arab region are projected to increase between 3 to 4 degrees by 2070 if GHG emissions continue to rise.[10]

DROUGHTS

Between 2006 and 2011, the region suffered one of its worst droughts in history, causing loss of life and livelihoods, mass displacement and migration.

5 OF THE TOP 10

The Arab States region is home to 5 of the top 10 countries most at risk from the impacts of climate change.[11]

RENEWABLE WATER

By 2030, renewable water resources will be reduced by 20% due to the impacts of climate change.[11]

AGRICULTURAL OUTPUT

The value of agricultural output could fall by 20% by 2080.[12]

SEA LEVEL RISE

Several of the region's major cities are located in low-lying coastal areas and a sea level rise of 0.5 m could displace 2 to 4 million people by 2050.[13]

NATURAL DISASTERS

Over 145 natural disasters killed 28,000+ people and affected 24+ million from 2005 to 2014.[3]

RESOURCE SCARCITY

The region is vulnerable to climate-induced displacement and conflict, threats exacerbated by resource scarcity and reduced agricultural yields.[14,15]

MITIGATION OPPORTUNITIES

Forested area[5]

5.9%
(of total land area 2011)

-22.5%
change (1990/2011)

Carbon dioxide emissions per capita (2010)[5]

4.6 TONNES

Primary energy supply (2014)[18]

7%
renewable sources

Electricity consumption annual growth (2010)[18]

7.9%

© UNDP Egypt

KEY ACHIEVEMENTS IN UNDP'S SUPPORT TO ADDRESS CLIMATE CHANGE

NATIONAL POLICIES AND PROCESSES

- Six countries were supported to prepare INDCs - **Egypt**, **Iraq**, **Lebanon**, **Morocco**, **Tunisia** and **Yemen**.
- **Iraq** supported on an assessment of conflict impacts on the environment and the first National Environmental Strategy and Action Plan.
- The development of the first National Climate Change Report in the Occupied **Palestinian Territories** will serve as a basis for climate change and energy resilience-building measures.
- In **Tunisia**, a new law on electricity production through renewable energy, including by the private sector, was adopted by the parliament in May 2015. This gave the opportunity to strengthen inclusive economic growth and sustainable development in the country by investing in the significant potential of renewable energy.
- **Jordan** was supported with its first National Climate Change Strategy.

CLIMATE ADAPTATION AND FOOD/WATER SECURITY

- Community resilience and livelihoods have been enhanced in vulnerable parts of **Sudan** via supporting drought and flood risk management practices for small holder farms, as well as via promoting innovative climate finance solutions, including weather-indexed insurance for small farmers and pastoralists.
- The risk from rising sea levels and climate-induced displacement has been reduced in **Egypt's** Nile Delta via policy changes and risk reduction strategies.
- Water security has been improved in **Yemen** via water harvesting technologies and solar-based irrigation initiatives that have benefitted poor rural farmers across hundreds of communities.
- In **Morocco**, six oases were protected (and food security strengthened) thanks to the development of relevant legislation and the involvement of 'Mayors as Champions'.
- With the launch of the Climate Nexus Initiative, the League of Arab States and members of the UN Development Group formed a regional partnership that will increase capacities for EWSs.

SUSTAINABLE ENERGY ACCESS

- Solar energy has been deployed in Gaza, **Palestine**, with energy access expanded in clinics, 4 schools (benefiting over 5,000 students) and in a Down's Syndrome society (benefiting over 1,000 children).
- Energy bills in **Lebanon** have been reduced and resilience improved through the deployment of decentralized solar power for 7 small and medium-sized enterprises and solar lighting for 1,400 vulnerable households serving approximately 7,000 individuals.
- Energy access has been improved in rural areas of **Egypt** through the introduction of agriculture waste-to-energy solutions, with biogas digester units installed, benefitting more than 950 farmer households and over 4,000 individuals.
- Decentralized energy solutions provided for the basic needs of Syrian refugee host-communities in **Lebanon**, including clean energy stoves for about 600 households or about 3,000 individuals and off-grid solar power street lighting in 40 municipalities. Collective solar powered electricity generation systems were also provided for five clinics.

LOW-CARBON DEVELOPMENT PATHWAYS

- Support provided to **Tunisia** to attract and direct public and private investment towards low-emission, climate resilient development by pioneering innovative approaches, such as the Derisking Renewable Energy Investments framework and tool.
- UNDP supported the establishment of the Dubai Carbon Center of Excellence in the **United Arab Emirates**, a flagship entity supporting the scaling up of low-carbon finance and innovative public-private partnerships.
- Support provided to the launch of **Saudi Arabia's** first national center of excellence for energy efficiency, a flagship institution that will help reduce growth-related energy intensity and scale up sustainable energy solutions.
- Support provided to the **League of Arab States** Regional Center for Renewable Energy and Energy Efficiency for new regional capacity development initiatives to derisk scaled-up investments into renewable energy, to expand energy access for poor and displaced communities, and to develop the Arab Future Energy Index. The index is a flagship analytic tool for ranking progress of countries on regional and national targets.
- In **Egypt**, agricultural waste is being used as a climate-neutral, alternative energy source to replace kerosene and liquefied petroleum gas (LPG) through the use of modern technologies such as biogas digesters. Over 900 household-size biogas digesters have been installed in 14 governates, along with more than 50 community-size digesters.

- **Morocco** was supported to adopt a groundbreaking new mandatory (passive) Energy Efficiency Buildings Code, due to go into effect in late 2015, which includes more than 15 Technical Guides and 188 standards relating to energy efficiency in buildings (as well as an energy efficient buildings label). An awareness-raising campaign reached 7 million people and helped launch a dedicated web portal, the first of its kind outside Europe.
- **Lebanon** launched a voluntary GHG emission reporting initiative for businesses in 2013 under the LECB programme. The recipients of reporting awards grew from 8 in 2013 to 32 in 2014, and to 41 in 2015.

GENDER

- In **Morocco**, facilitating women's participation in community-based adaptation has contributed to gender mainstreaming, with women now contributing to adaptation-related projects.
- Support provided to build the resilience of rain-fed farmer and pastoral communities in **Sudan**, especially among female-headed households. Within Village Development Committees, women manage revolving funds (sandug) for promoting the acquisition of LPG cylinders and stoves. In 2014, more than 2,000 women benefitted directly from the project in Sudan and more than 1,500 butane gas units were provided to households in four states.

SUDAN

NEW TECHNIQUES HELP FARMERS ADAPT TO CLIMATE CHANGE

A UNDP pilot project in four states of Sudan has provided substantial improvements in the everyday lives of farmers by helping them adapt to climate change's effects. This was accomplished by:

- Training farmers in the adoption of new water harvesting techniques.
- Providing irrigation pumps, various types of water harvesting techniques, and drought-resistant seeds, as well as providing training for using these inputs.
- Achieving year-round cultivation of crops via PV-based irrigation systems.
- Cooking with butane gas rather than with expensive (and unsustainably sourced) charcoal or wood.
- Providing regular vaccinations for livestock.
- Reducing sand encroachment onto farming and grazing lands via tree planting.

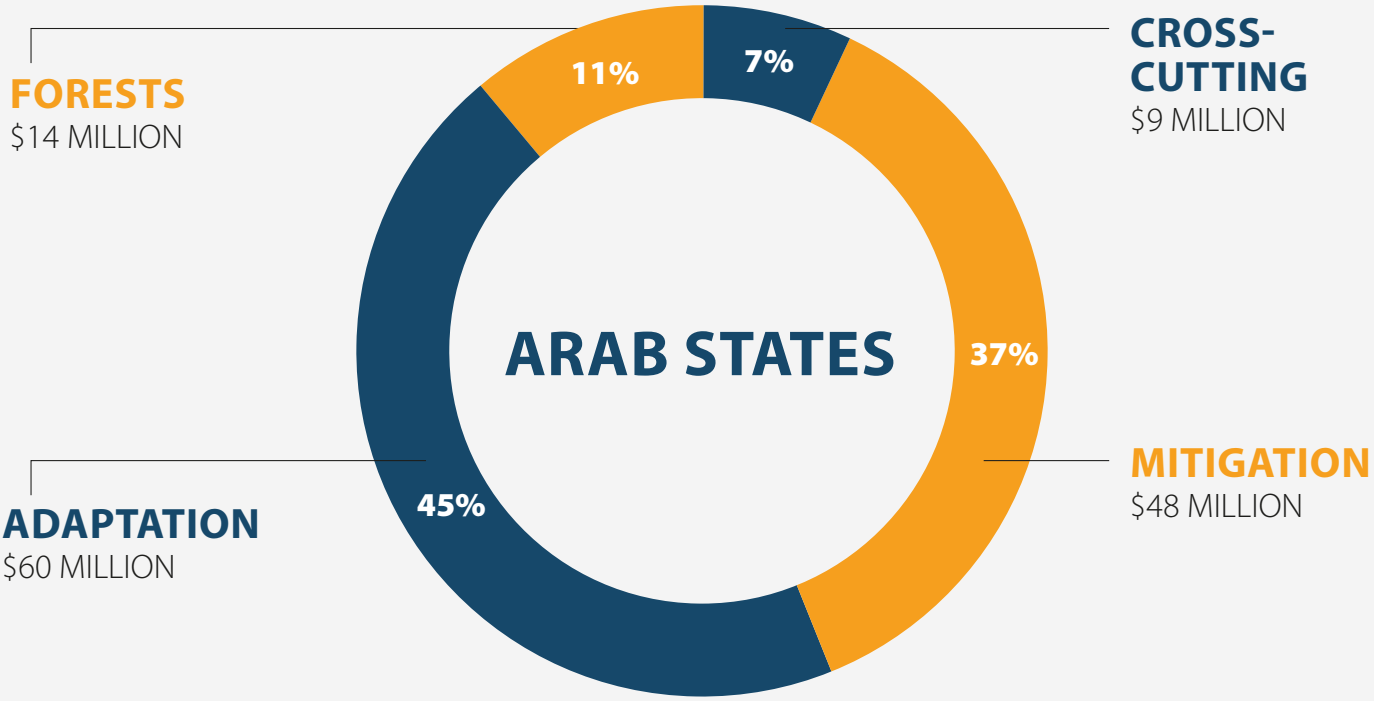
LEBANON

SOLAR POWER INCREASES THE RESILIENCE OF SYRIAN REFUGEE HOST COMMUNITIES

Lebanon is the world's largest host of Syrian refugees, with refugees now making up about a quarter of the country's population. One challenge among many is that, as a result of a changing climate and increasingly severe winter weather, many host communities struggle to heat their homes, a situation further compounded by lengthy power cuts. Communities often rely on diesel-fuel stoves; diesel is highly flammable and often expensive, leaving many families vulnerable. But with the support of the Government of Germany, UNDP has helped introduce renewable energy solutions to Lebanon. New stoves (which use sustainably-produced briquettes made from carpentry and agricultural waste) are now being used by over 594 households across northern Lebanon. Results include:

- Reduced household energy expenditures.
- Reduced illegal logging of Lebanon's forests.
- Introduction of 5 KWh into the energy supply per kg of briquette, with each stove heating over 100 square meters of household space.
- Community members educated in sustainable energy stove safety and upkeep instructions.

UNDP has invested $131 million in 12 countries across the Arab States region, supporting:



CHALLENGES AND OPPORTUNITIES

- This region is expected to be severely impacted by climate change in coming years—it is home to the world's lowest levels of per capita arable land and available freshwater, and faces dramatic increases in poverty rates and armed conflict.
- Need to build bridges between humanitarian assistance and climate finance in conflict and post-conflict contexts.
- Building regional and national capacities for climate risk-informed development pathways, e.g. through implementation of NAPAs and support for the development and implementation of NAPs through scaled up climate finance in LDCs.
- Has one of the world's fastest growing rates of energy intensity (a 7.9 percent annual electricity consumption growth rate) alongside declining oil and gas reserves.[19] Meanwhile, 40 percent of the region's poor (as well as communities displaced by war and conflict) lack sustainable access to energy.
- However, there are many opportunities for investments in renewable energy and energy efficiency measures and for expanding energy access for poor communities.

SCALING-UP ACTION

- National policies and community resilience to manage climate risks, reduce poverty and reduce food/water insecurity.
- Sustainable energy access for communities hosting refugees and internally displaced persons.
- National centers of excellence for innovation and low-carbon development pathways in Arab Gulf countries.
- Use of legislative frameworks and institutional agreements to promote GHG reporting from key data providers, including the private sector (e.g. Lebanon).
- De-risking policies and institutions to help scale up public and private investment in low-carbon sustainable energy solutions (e.g. Tunisia, Lebanon).

THE FUTURE AND ON-GOING EFFORTS

- Regional initiatives with the League of Arab States for climate risk-informed development to implement SDGs and new regional strategies on climate change and renewable energy.
- Support provided for the development of nine National Communications and six Biennial Update Reports.
- Supporting the development of new adaptation and energy access initiatives in LDCs and Low-Middle Income Countries that are focused on climate risks to human development and food/water insecurity.
- Policy reform and public-private partnerships initiatives to de-risk scaled up renewable energy investments.
- Climate finance initiatives to promote innovative approaches to climate adaptation and drought risk reduction, including climate insurance.
- Scaling up initiatives to integrate energy access solutions for communities hosting refugees and internally displaced persons. South-South cooperation with Arab Gulf partners to support scale up of global climate change and energy actions under the SDGs.
- Design of innovative NAMA concepts in agriculture, urban design/logistics hubs, hybrid electric vehicles and tourism, with support of GEF and LECB projects.
- Mobilization of donors from high-income Arab countries to support scaled up global finance for LDCs, SIDS and Africa.

ASIA AND THE PACIFIC

VULNERABILITY

456.4

456.4 million live on less than $1.90 a day.[20]

505

505 million are undernourished.[24]

10%

10% of South Asia's population lives on degraded land (2010).[5]

58%

58% of population live in rural areas where 81% are dependent on agriculture for their livelihoods.[25]

2,036 ▸ 2,212

Population increase in East Asia and the Pacific (in millions) from 2013 to 2030.[5]

CLIMATE CHANGE IMPACTS

CLIMATE-RELATED DISASTERS
27.5% of total global economic loss from weather- and climate-related disasters (2000-2008).[21]

INCREASED DEMAND
Declines in productivity and increased water scarcity in many countries due to increased demand and lack of effective governance.[25]

FOOD PRICES
14%-20% drop in irrigated rice yields over the next four decades, pushing up food prices and increasing the number of malnourished children.[22]

SEA-LEVEL RISE
A rise of 0.5-2 m in sea level over this century could displace 53 to 125 million people.[22]

NATURAL DISASTERS
Over 1,300+ natural disasters killed 331,000+ people and affected 1.4+ billion from 2005 to 2014.[3]

DEVELOPMENT
Stress from rapid urbanization, industrialization, and economic development will be compounded by climate change.

MALNUTRITION
By 2050, the number of additional children suffering from malnutrition in developing Asia could be between 9 and 11 million.[22]

LOSS OF LIVELIHOODS
Loss of livelihoods, settlements, infrastructure, ecosystem services and economic stability due to climate change (SIDS are vulnerable, especially in low-lying coastal areas).[14,23]

MITIGATION OPPORTUNITIES

Forested area[5]

29.7%
(of total land area in the East Asia and the Pacific region (2011))

2.6%
change (1990/2011)

14.6%
of total land area in the South Asia region (2011)

3.3%
change (1990/2011)

Carbon dioxide emissions per capita (2010)[5]

4.9
TONNES
in the East Asia and the Pacific region

1.7
TONNES
in the South Asia region

Primary energy supply

76.3%
fossil fuel and

23.7%
renewable sources in South Asia (2012)[5]

83.8%
fossil fuel and

16.2%
renewable sources in East Asia and the Pacific (2012)[26]

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KEY ACHIEVEMENTS IN UNDP'S SUPPORT TO ADDRESS CLIMATE CHANGE

NATIONAL POLICIES AND PROCESSES

- Nine countries were supported to prepare INDCs. The integration of climate resilient and environmentally sustainable policies and budgets into development plans was widely promoted in **Bangladesh, Cambodia, Indonesia** and eight **Pacific Island** states.
- Provided technical assistance and capacity building, in collaboration with FAO and UNEP, to ensure that **Nepal's** planning, budgeting and financing systems are "ready" to access, manage, sequence and report climate finance. This is done by developing investment frameworks for adaptation actions to reduce the risks of climate-induced disasters and integrating climate adaptation measures into relevant national and subnational development planning and budgeting processes.

FORESTS

- Supporting 19 countries to prepare for REDD+ results-based finance through the design and implementation of policies and measures to reduce deforestation and forest degradation.
- Adapting production processes for coffee, rubber and shrimp production in **Vietnam** to maintain or increase economic benefits while reducing adverse environmental impacts through the UN-REDD programme, in collaboration with FAO and UNEP. Strengthened capacities of local stakeholders to participate fully and effectively in decision-making related to the use of forests to achieve the goal of reducing emissions from nearly 2 million ha.
- Assisted the Government of **Indonesia** with an ambitious REDD+ agenda, placing responsibility in its Ministry of Environment and Forestry to build on the achievements of the results of the first phase, while preparing the start of Phase 2 of the REDD+ Partnership in 2016.
- A portfolio across 23 Asia Pacific countries provides for the protection and sustainable management of valuable ecosystems and contributes to the conservation of livelihoods and carbon sinks.
- Since 2000, this portfolio has impacted more than 600 protected areas, including indigenous and community conserved areas, covering more than 120 million ha.
- Sustainable use policies have been promoted by the demonstration and implementation of sustainable management practices, the establishment of certification schemes and the provision of sustainable livelihoods, with direct impacts across more than 3 million ha since 2000.

CLIMATE ADAPTATION AND FOOD SECURITY

- Nearly 40,000 people from all of the **Pacific's Small Island Developing States** were supported in adaptation via the securing of water supplies, the establishment of nurseries for resilient food production, and an increase in renewable energy prospects.
- The Nagaland state government was supported to introduce beneficial agricultural practices for farmers in 70 villages that resulted in a 15 to 20 percent increase in average annual income for the 5,008 households participating in the project. Vegetation cover improved for over 2,000 ha of land, while soil erosion rates decreased from 50 m/ha per year to 26 m/ha per year.
- Through the Pacific Adaptation to Climate Change (PACC) Programme, the **Marshall Islands** improved rainwater collection in the capital city of Majuro by increasing the airport reservoir to 138 million litres by using the runway (the island's largest paved area) to collect water and reducing losses from seepage and evaporation.

DISASTER RISK MANAGEMENT AND CLIMATE RESILIENCE

- In **Vietnam**, women are represented in communal and provincial disaster prevention and relief committees in 63 provinces.[27]
- In **Bhutan**, the Disaster Management Act was formulated and enacted, which decentralizes disaster risk management (DRM) activities and empowers subnational institutions to implement DRR strategies more effectively. The Glacial Lake Outburst Flood (GLOF) EWS covering 90 percent of households in the 21 vulnerable communities downstream from the Punatsangchu River was also installed. Training was conducted on mainstreaming DRR—including information on national DRM frameworks and GLOF risks—targeting 70 national and district DRM focal points (40 percent of which were women).

SUSTAINABLE ENERGY ACCESS

- The "Empowering Rural Women to Create Off-Grid Solar Electrification" project supported the training and empowerment of 71 women who have been able to provide electricity to 53 villages, ultimately providing lighting to more than 22,739 beneficiaries in over 3,778 households[8] in Africa's and Asia's poorest countries.

LOW-CARBON DEVELOPMENT PATHWAYS

- Comprehensive, firm-level data collection is being undertaken in industry sectors (cement, iron and steel and fertilizer) in **Thailand** and **Vietnam** through the LECB to design and estimate GHG sectoral baselines, future GHG emission scenarios and mitigation roadmaps.
- Low carbon certification rules, standards and methodologies were developed in **China** under the LECB programme for a number of manufacturing activities as part of low-carbon certification and accreditation schemes in Chongqing City and Guangdong Province.
- The **Philippines** were supported to prepare Executive Order 174, 'Institutionalizing the Philippine Greenhouse Gas Inventory Management and Reporting System.'
- In **Myanmar**, **Timor-Leste** and **Vanuatu**, MDG Carbon has assisted private sector partners to register CDM Programme of Activities that promote the use of efficient cook stoves and other efficient appliances

GENDER

- The provision of training and new technologies to rural women in **Cambodia** has strengthened their capacity as leaders and drivers of climate change adaptation. Women are now driving the design and implementation of new water practices, becoming contributors of household incomes and making decisions regarding domestic water usage.[28]
- In **Nepal**, a wetland-based micro-enterprise run by 25 women has been turned into a multi-purpose cooperative that is likely to be developed into a joint venture company.

INDIA

INDIA BRINGS SUN INTO THE KITCHEN

A UNDP-supported project promotes the use of concentrated solar heating technology in a range of industries, commercial establishments and religious and philanthropic institutions. It aims to promote and develop a viable and strong market for solar concentrators in order to reduce or replace the use of conventional fuels that degrade the environment.

- Solar-powered cooking systems are feeding more than 10 million people. Over the last two years, the rate of installation of solar concentrated heating systems has more than doubled in the country. Since 2012, 10,469 square metres of systems have been installed, saving 5.982 million units of electricity (equivalent to 645 tonnes of fuel oil) and reducing CO_2 emissions by 2,976 tonnes per year.
- Over the next 3 years, the project aims to install 45,000 square metres of concentrated solar technology based systems across India, saving 39,200 tonnes of CO_2 emissions and 3.15 million litres of fuel oil each year.
- Ramakrishna Mission's Students' Home in Chennai, one of the institutions benefitting from this project, has been able to halve the consumption of liquefied petroleum gas, reducing expenditures by approximately $8,000 every year. The ARUN®100 system installed at the Mission is designed to capture the maximum heat from the sun and use it to continuously turn water into steam, which is piped to an accumulator and then to the kitchen. The accumulator is a key innovation, allowing for unused steam to be stored in a large insulated storage tank as high-pressured hot water. The innovation in solar technology means that not only is cooking quicker, thanks to the continuous supply of steam at constant optimum pressure, but that heat is available for cooking at any time (important for institutions like the Mission, which provides up to 3,000 meals each day).

FIJI, TONGA, VANUATU AND THE SOLOMON ISLANDS

STRENGTHENING GOVERNANCE MECHANISMS FOR DISASTER RISK MANAGEMENT AND CLIMATE CHANGE ADAPTATION

The five-year Pacific Risk Resilience Programme, funded by the Australian Government's Department of Foreign Affairs and Trade, is being delivered via a partnership of UNDP, the international NGO Live and Learn Environmental Education (LLEE), and the governments of Fiji, Tonga, Vanuatu and the Solomon Islands. The project is strengthening climate and DRM through:

- Risk-proofing medium-term development plans across sector line ministries and helping them better allocate resources for DRM and addressing climate change.
- Partnering with the Solomon Islands' Temotu provincial government to manage the response and recovery efforts of affected communities following the 2013 tsunami.
- Strengthening community planning for DRM and climate change adaptation through a pilot on Tonga's 'Eua Island.
- Implementing an Education in Emergency policy at the school level and examining ways in which education systems can integrate adaptation and risk reduction (beyond the emergency stage) in partnership with UNICEF and other agencies.

INDONESIA

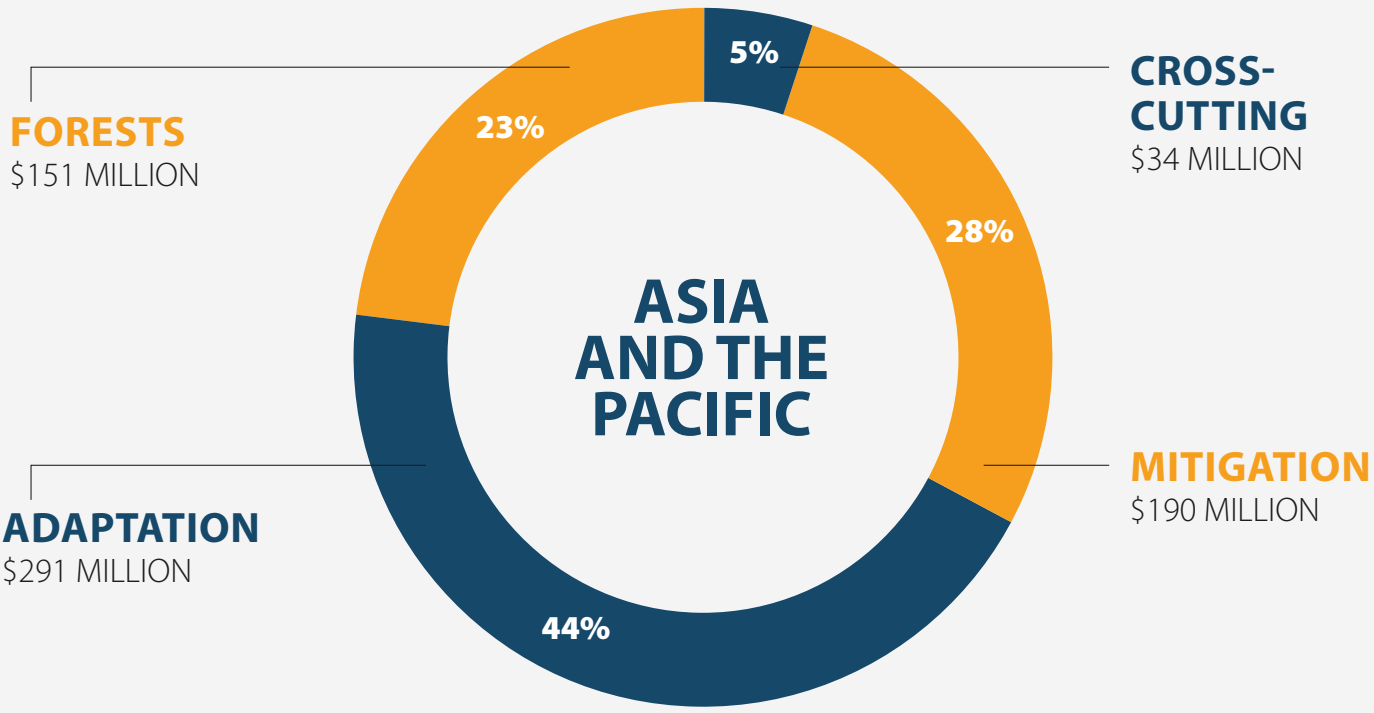
INDC FORMS BASIS FOR CLIMATE CHANGE AGENDA TO DELIVER ON THE SDGS

Developed with support from UNDP and funded by the European Commission, Indonesia's INDC commits the country to unconditionally reducing its national GHG emissions by 29 percent by 2030 (as compared to a business-as-usual scenario). The contribution emphasizes Indonesia's commitment to a low-carbon future while also underscoring the need to advance its strategic development priorities, including poverty reduction. Developed in consultation with key stakeholders, the INDC goes beyond the country's pre-2020 commitment and will be fully integrated into its National Medium-Term Development Plan for 2019-2024. The INDC also:

- Includes a target to reduce emissions by up to 41 percent in the same time period, conditional upon receipt of international support.
- Outlines the 2015-2019 enabling environment that will lay the foundation for more ambitious post-2020 targets that contribute to the global two-degree goal.
- Emphasizes Indonesia's national commitment to climate change resilience and adaptation, given its vulnerability as a low-lying archipelago.
- Describes ongoing mitigation efforts in the land use, energy and waste sectors and how these will be strengthened to help Indonesia achieve its post-2020 target.

Indonesia's INDC represents an example of how the contributions are being linked with the SDGs. The INDC will also be used as a basis for mainstreaming the climate change agenda into development planning and will seek to put in place the necessary enabling environment during the 2016-2019 period in order to provide the foundation for more ambitious goals beyond 2020.

UNDP has invested $666 million in 31 countries across the Asia and the Pacific region



CHALLENGES AND OPPORTUNITIES

- Awareness of climate change and the realization that both state and non-state entities need to act is at an all-time high.
- Non-conventional actors, such as subnational governments, are also paying closer attention to climate change and acting on their own (e.g. cities).
- Need to enhance inter-sectoral dialogue and coordination at national and subnational levels to improve synergies between mitigation and adaptation interventions.
- Similarly, REDD+ national strategies should be designed to encompass major drivers of deforestation outside the sole forest sector.
- There are immense data, technology and institutional capacity needs related to climate and mitigation scenarios and the understanding of risks and impacts.
- Engaging the private sector in adaptation is constrained by a lack of awareness and capacity, as well as by a lack of an enabling policy and regulatory environment.
- An increased shift towards non-grant financing in the scale up of energy access, energy efficiency and renewable energy and an increased availability of public and private investments in sustainable cities and urban transport.
- Governments have a short-term energy development vision and weak commitment to enforcing GHG mitigation policies.
- Many countries have high expectations for the Green Climate Fund (GCF) to finance their scaled-up efforts to achieve the SDGs.

SCALING-UP ACTION

- Measuring, Reporting, and Verification (MRV) and finance readiness tests for NAMA design using a tool designed under the LECB (**Vietnam**).
- The **Philippines** created an inter-agency committee under LECBP to oversee the design and implementation of the National Integrated Climate Change Database and Information Exchange System to support GHG emission reporting and monitoring of climate strategies and NAMAs.
- In Indonesia, a wide Participatory Governance Assessment was undertaken as part of REDD+ to inform policy-making and priorities.
- In **Cambodia**, an integrated approach involving access to finance, solar water pumps and capacity building enabled the implementation of new technologies/practices that enhanced agricultural productivity, water use efficiency and livelihoods.
- In **Bangladesh**, policy change ensured ownership of land for farmers and allowed them to invest in adaptation measures and adopt climate resilient practices.
- Access to microfinance is critical for energy access expansion, as has been proven in **Nepal** and **Sri Lanka**.
- Private sector champions initiating limited-scale, low-carbon projects in **Malaysia** and **Thailand**.
- Given the diversity of physical and human attributes, community-based adaptation has been shown to generate larger benefits when delivered in conjunction with other development activities.[14]

THE FUTURE AND ON-GOING EFFORTS

- NAMAs are being designed across a range of sectors in **Bhutan**, **Cambodia**, **Indonesia**, **Laos, Malaysia**, the **Philippines**, **Sri Lanka**, **Thailand** and **Vietnam**.
- Support provided for the development of 17 National Communications and 5 Biennial Update Reports.
- Finalizing REDD+ readiness efforts and moving into REDD+ implementation.
- The joint UNDP/UNEP-managed NAP Global Support program has been supporting LDCs to strengthen their institutional and technical capacities for advancing the national adaptation planning process. It has supported more than 30 LDCs globally through technical assistance to advance their NAPs processes. All LDCs in Asia-Pacific have received training on the NAP guidelines in regional forums convened by UNDP and UNEP. The GSP is now being expanded to also support non-LDCs.
- A joint UNDP/UNEP initiative for the capacity building of junior and experienced LDC negotiators on thematic issues and negotiation techniques has included participants from all LDCs in Asia.
- High expectations for regional and multilateral initiatives such as the South Asian Association for Regional Cooperation (SAARC) Development Fund and Asian Infrastructure Investment Bank (AIIB).
- Climate Public Expenditure and Institutional Reviews are helping countries to ensure accountability in addressing climate change through national budgets.
- Future mitigation efforts should focus on enforcement and monitoring of compliance with existing policies.
- Pacific SIDS are being supported to increase the resilience of people, critical infrastructure and assets and livelihoods against the increasing frequency of extreme weather events as well as the impacts of slow-onset sea level rise.
- Supporting countries to incorporate ecosystem-based approaches as part of overall adaptation strategies.
- New renewable energy investments in Pacific Island countries.

EUROPE AND THE COMMONWEALTH OF INDEPENDENT STATES (ECIS)

VULNERABILITY

10.1

10.1 million live on less than $1.90 a day.[29]

6

6 million are undernourished.[31]

10.7%

10.7% live on degraded land (2010).[5]

233 ▸ 251

Population increase (in millions) from 2013 to 2030.[5]

CLIMATE CHANGE IMPACTS

SEA LEVEL RISE
A 1 m sea level rise in Turkey could affect

3 MILLION
additional people and put

$12 BILLION of capital value at risk, with approximately

$20 BILLION in adaptation costs.[30]

ECONOMIC FLOOD LOSS
Economic flood losses in Europe could increase 17-fold by the end of the century.[30]

COASTAL FLOODING
Coastal flooding in the 2080s is projected to affect an additional 775,000 to 5.5 million people per year in the EU27 (with the Atlantic, northern, and southern European regions most affected).[30]

NATURAL DISASTERS
Over 316 natural disasters killed 60,000+ people and affected 11+ million from 2005 to 2014.[3]

DROUGHT
Increasing drought, water restrictions and long-term food security concerns in some Central Asian republics.

MITIGATION OPPORTUNITIES

Forested area[5]

9.1%
(of total land area 2011)

7.7%
change (1990/2011)

Primary energy supply (2012)[6]

89.4%
fossil fuel

10.5%
renewable sources

Carbon dioxide emissions per capita (2010)[5]

5.4 TONNES

KEY ACHIEVEMENTS IN UNDP'S SUPPORT TO ADDRESS CLIMATE CHANGE

NATIONAL POLICIES AND PROCESSES

- Seven countries were supported to prepare INDC's. Capacity building support and policy advice was provided to all countries in the region on the UNFCCC negotiations via training, workshops and technical papers.
- Support for the development of low-emission and climate resilient strategies in **Bosnia and Herzegovina, Moldova Turkmenistan,** and **Uzbekistan,** which has resulted in more ambitious INDCs, the identification of priority areas for NAMAs, and the identification of additional support that is still needed.
- **Moldova's** National GHG Inventory System has been improved under the LECB by strengthening national institutional and technical capacity. This system will support the monitoring, reporting and verification of NAMAs.

CLIMATE ADAPTATION AND FOOD SECURITY

- Supported national climate risk management policies and locally-tailored adaptation solutions in agriculture, forestry and water sectors across Central Asia.
- Improved knowledge base and demonstrated innovative ecosystem-based approaches to climate change mitigation and adaptation in **Armenia, Azerbaijan, Belarus, Georgia, Moldova** and **Ukraine.**
- Improved forest fire management and reduced vulnerability to climate change on over 100,000 ha of forests in **Armenia's** Syunik region, as well as contributed to enhancing Armenian forest fire management through national legislation and strategies.
- Strengthening the resilience of local communities and ecosystems and enhancing rural livelihoods in **Armenia, Azerbaijan, Belarus, Georgia, Moldova** and **Ukraine** via integrated, ecosystem-based climate change adaptation and mitigation solutions in partnership with the EC and the GEF.
- Supporting the communities and governments of **Azerbaijan** and **Georgia** in addressing climate-induced floods and landslides with support from the Special Climate Change Fund and AF.
- Promoting sustainable, resilient agricultural practices and improved water efficiency in **Turkmenistan** and **Uzbekistan** with support from the GEF and the AF.

SUSTAINABLE ENERGY ACCESS

- Overall, UNDP's energy interventions in the region benefited over 400,000 people in over 400 communities and cities, and is estimated to have resulted in over 10 million tons of reduced direct GHG emissions. Since 2012, UNDP invested over $100 million in sustainable energy projects in the ECIS region.
- Informed decision-making on renewable energy standards and energy efficiency practices in **Kyrgyzstan** and **Tajikistan** through analyses of sustainable energy and human development in ECIS and market and policy outlooks for renewable energy.

LOW-CARBON DEVELOPMENT PATHWAYS

- The Energy Management Information System, a unique energy management tool that enables real-time monitoring and management of energy use in buildings developed by the UNDP Country Office in **Croatia**, now covers 9,000 public buildings and has resulted in a reduction of $18 million per year in public spending on energy; over $30 million has instead been invested in increasing energy efficiency.
- **Armenia, Kazakhstan, Russia** and **Ukraine** have been supported to promote market transformation for energy efficient lighting (with a focus on municipal/street lighting) with funding from the GEF. In **Armenia**, a street lighting modernization project achieved a saving of over 60 percent and created a revolving financial mechanism with the Municipality of Yerevan to enable the replication and scaling up of investment in street lighting upgrades.
- **Turkey** is being assisted with funding from the GEF to facilitate a market transformation for more efficient appliances through the introduction and adoption of new energy labeling and eco-design requirements. It is estimated that as a result of the new legislation, approximately 2.80 million tonnes of CO_2eq have been saved due to the introduction of more efficient appliances, including refrigerating appliances, dishwashers, washing machines, tumble driers, TVs, air conditioners, domestic ovens, hobs and range hoods.
- A credit-line facility was designed for commercial banks to lend to small hydro plants in **Georgia** in partnership with KfW, the German government-owned development bank. Local banks have now become comfortable lending to this sector.

GENDER

- In **Armenia**, women's ability to sustain the livelihoods of their families has been improved by the collection of non-timber forest products and the production of fruit jams, compotes and dried fruits through the planting of fruit trees and agroforestry ecosystem services. 65 households have gained additional incomes.
- In **Turkey**, UNDP provided educational seminars and environmentally-friendly equipment to a group of more than 70 fisherwomen for the sustainable management of Turkey's Datça-Bozburun Special Environmental Protection Area.

ARMENIA

AGROFOREST ECOSYSTEM SERVICES IMPROVED WITH THE HELP OF LOCAL COMMUNITIES

In the "Poqrik Lchak" area of Norashenik village, a decades-long trend of deforestation caused five of seven community springs to dry up. But with support from the GEF Small Grants Programme, the community has successfully reforested the area and restored its ecosystem. Results include:

- The planting of 3,500 native Pyrus Caucasica pears—"forest pears" that are of high economic value—and 3,000 linden tree varieties, which will help local beekeepers achieve high honey yields.
- The implementation of sustainable land use forestry practices at the community level through education and practical training.
- The recovery of the springs and forest cover.
- 35 households benefitting from the additional income resulting from the collection of wild pears and other non-timber forest products.
- Another 30 households benefitting from beekeeping with linden trees.
- Women's empowerment increased, thanks to the sustainable livelihoods created by the collection of non-timber forest products and the production of fruit jams, compotes and dried fruits.
- Great replication and scaling up potential throughout the country, as the environmental and socio-economic problems addressed by this project are common to communities throughout Armenia.

KAZAKHSTAN

IMPROVED WEATHER FORECASTING ASSISTS AGRICULTURE

The world's ninth largest producer and seventh largest exporter of wheat, Kazakhstan is especially vulnerable to rising temperatures due to its arid climate and landlocked landscape. Without accurate forecasting, inconsistent and inaccurate weather forecasts harm harvests and threaten the food security of the entire Central Asian region. Through a UNDP-supported project on improved forecasting[32], the following has been achieved:

- Meteorologists can now issue accurate climate forecasts for the whole season in a few seconds.
- 600 farmers are receiving up-to-date weather and climate forecasts. Participating farmers have reported a 20 percent higher yield on average.
- 22 advanced wheat cultivation agricultural technologies were introduced; these technologies are resilient to climatic shocks.
- The Central Asian Wheat Genetic Resource Center was established, with a capacity to store over 300 wild relatives and species of wheat seeds and bringing new collaborative research opportunities.

TAJIKISTAN

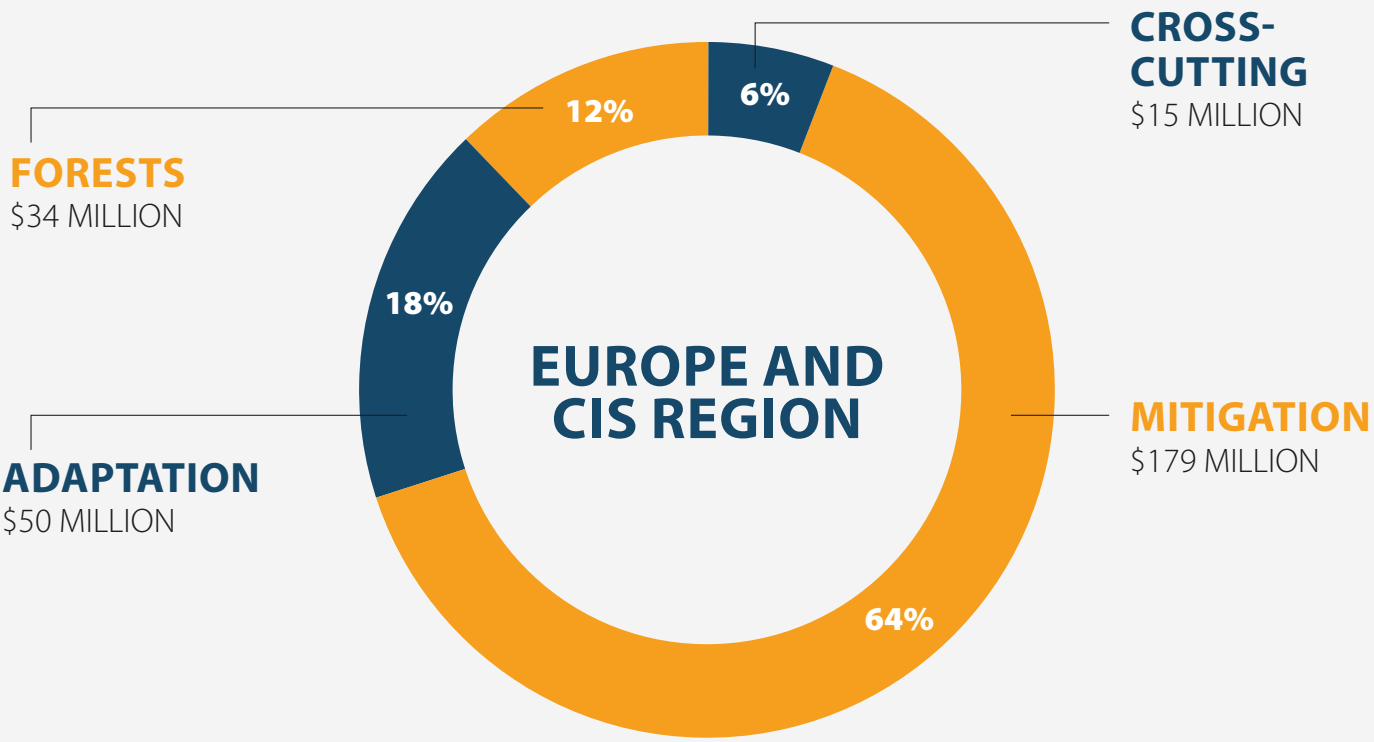
SUPPORTING SUSTAINABLE TRANSPORT MANAGEMENT

Since early 2000, Tajikistan's capital city, Dushanbe, has experienced rapid expansion in the use of private motor vehicles. This has led to a significant increase in urban air pollution and GHG emissions. It is estimated that 87 percent of the total air emissions in Dushanbe are associated with mobile sources. UNDP is supporting the Government of Tajikistan to promote sustainable mobility practices in Dushanbe as a means of achieving significant reductions in GHG emissions. This involves:

- Improving the quality of public transport services and the promotion of soft mobility modes (walking and cycling).
- Creating dedicated bus lanes for public transport, which cover 15 km and help achieve government-adopted fuel efficiency standards.
- In May 2014, a city-wide awareness campaign was launched under the slogan "I'm for safety on the roads, and what about you?" in collaboration with the Mayor's Office, the State Automobile Inspectorate of Dushanbe, the Public Organization 'The 21st Century Youth' and UN Volunteers. The purpose of this event was to promote the prevention of road traffic accidents, encourage the efficient operation of public transport and improve driver/pedestrian traffic literacy.

- The Single Dispatch Control Center was implemented to control public transport routes along the central Rudaki Avenue in Dushanbe, with 25 information boards installed at the bus stops and 60 GPS trackers installed on buses/ trolleys.
- The project supported capacity building interventions by training transport sector officials on best practice designs for bus lanes, traffic management issues, fare collection and parking, among other issues, and is heralded as being a leading sustainable transport project in Central Asia.

UNDP has invested $278 million in 20 countries across the ECIS region



CHALLENGES AND OPPORTUNITIES

- Establishing East-East partnerships, supporting intra-regional knowledge transfer and engaging with new donors in the ECIS region in order to increase the regional resource base for low-carbon and climate resilient development.
- Addressing inequalities to reduce vulnerability to climate change; some countries in the region have had limited opportunities and financial resources to formulate and adopt national or subnational adaptation policies and/or implement risk management measures.
- Initiating NAP processes to inform sustainable development programming and improve the resilience of development results.
- Building capacities to establish national designated authorities and developing funding proposals for the GCF.
- Developing timely and ambitious INDCs for the Paris climate change agreement.
- One of the most energy-intensive regions in the world, both in terms of energy consumption and production. Energy losses account for almost a third of total domestic energy use. Due to large GHG emissions per dollar of GDP produced, the region has significant potential to reduce GHG emissions per dollar invested in a cost-effective manner.[33]

SCALING-UP ACTION

- Central Asia Climate Risk Management Programme: National policies and local community pilots for improving the resilience of agricultural communities, food security and water efficiency across Central Asia.
- Ecosystem-based climate change mitigation and adaptation: Reduced emissions and improved carbon pools in peatlands, forests and steppe ecosystems as well as sustainable pasture management.
- Innovative approaches to clean energy access in remote rural areas in Central Asia.
- Systematic documentation of the national GHG inventory system in a guidance manual for national experts (Moldova).
- **Moldova** used the results of its GEF-supported Technology Needs Assessment to create and prioritize its NAMA pipeline under LECB.
- National rules and procedures for approval of NAMAs in **Bosnia and Herzegovina**.
- **Armenia**, **Belarus**, **Kazakhstan**, **Kyrgyzstan**, **Turkmenistan** and **Uzbekistan** have introduced energy efficient building codes. In Uzbekistan, all publicly financed new and retrofitted buildings now consume 25-50 percent less energy than before the reforms, while in Yerevan, Armenia, residents in multi-apartment buildings that piloted the measure now have affordable heating.

THE FUTURE AND ON-GOING EFFORTS

- Replicating and scaling up successful adaptation practices in agriculture and water sectors by exploring new funding opportunities for the region.
- Support provided for the development of six National Communications and eight Biennial Update Reports.
- Further integration of adaptation into DRR policies and practices through the support of national adaptation planning and programming.
- Support to implement INDCs submitted from the region and supporting the implementation of Low Emissions Development Strategies (LEDS) and NAMAs, including access to climate finance.
- Supporting policy reform and public-private partnerships initiatives to de-risk scaled up renewable energy investments.

LATIN AMERICA AND THE CARIBBEAN

VULNERABILITY

28.8

28.8 million live on less than $1.90 a day.[34]

37

37 million are undernourished.[38]

5.3%

5.3% live on degraded land (2010).[5]

611 ▸ 711

Population increase (in millions) from 2013 to 2030.[5]

CLIMATE CHANGE IMPACTS

ARABLE LAND LOSS
By the end of the 21st century, 1%-21% of arable land will be lost due to climate change and population growth.[35]

IMPACTED CROPS
80% of crops will be impacted in more than 60% of current areas under cultivation in Colombia.[35]

NATURAL DISASTERS
More than 20% of the total area of the Metropolitan Region of São Paulo could potentially be affected by natural disasters.[35]

DENGUE FEVER
In Rio de Janeiro, a 1°C increase in monthly minimum temperature led to a 45% increase of dengue fever.[35]

NATURAL DISASTERS
Over 624 natural disasters killed 244,000+ people and affected 64+ MILLION from 2005 to 2014.[3]

WATER AVAILABILITY AND FOOD PRODUCTION
The impacts of climate change will affect water availability and decrease food production/quality.[23,36]

PROJECTED LOSS
Projected loss of livelihoods, settlements, infrastructure, ecosystem services and economic stability due to climate change.[14,37]

MITIGATION OPPORTUNITIES

Forested area[5]

46.7%
(of total land area 2011)

-9.2%
change (1990/2011)

Primary energy supply (2012)[5]

74.2%
fossil fuel

25.8%
renewable sources

Carbon dioxide emissions per capita (2010)[5]

2.9 TONNES

KEY ACHIEVEMENTS IN UNDP'S SUPPORT TO ADDRESS CLIMATE CHANGE

NATIONAL POLICIES AND PROCESSES

- 13 countries were supported to prepare INDCs.
- Climate-related investment and financial flows were evaluated in nine countries. The results were incorporated into national policies and processes.
- Climate Public Expenditures and Institutional Reviews are being conducted in **Chile**, **Colombia**, **Ecuador**, **El Salvador**, **Honduras** and **Nicaragua**, leading to an improved understanding of how climate change is being addressed as part of national budgets and allowing for more strategic mitigation and adaptation initiatives. **Chile** and **Ecuador** will also pilot estimations of private sector finance flows through the LECB.

FORESTS

- A $171 million portfolio in 16 **LAC countries** provides for the protection and sustainable management of forests and contributes to the conservation of carbon sinks.
- The strengthening and creation of 571 protected areas, covering 55,184,000 ha.
- Sustainable forestry policies have been promoted by the demonstration and implementation of sustainable management practices, the establishment of certification schemes and the provision of sustainable livelihoods.

CLIMATE ADAPTATION AND FOOD SECURITY

- In the **Honduran** capital of Tegucigalpa, a 63,000-litre storage tank has been installed alongside a rooftop rainwater harvesting system for nearly 2,000 residents of the Campo Cielo district under an AF project, helping to address climate risks through improved water resource management. Automatic weather stations that can help prepare for future extreme weather events are also being installed, benefiting 13,000 residents in areas vulnerable to landslides and floods. In addition, the protection of more than 60,000 ha of the Choluteca basin forest, critical to Tegucigalpa's water supply, micro-irrigation systems and distribution of water filters to communities will help over 10,000 poor households increase their access to water by 50 percent throughout the year.
- Local farmers in **Haiti** are being helped to strengthen food security through technical capacity building on crop diversification, composting and water management. In addition, watershed management is being enhanced through the planting of 2.5 million trees (80 percent wood trees and 20 percent fruit trees) in critical, deforested watershed areas as well as 150 ha of mangroves that also protect against sea level rise.

DISASTER RISK MANAGEMENT AND CLIMATE RESILIENCE

- Five countries in the Caribbean have new or strengthened climate EWSs.
- 10 countries in the region have disaster preparedness plans and processes in place.

LOW-CARBON DEVELOPMENT PATHWAYS

- Through the UNDP-GEF Small Grants Programme, UNDP has supported marginalized local communities in the **Dominican Republic** to establish off-grid community micro-hydropower systems to provide energy access. In the past 15 years, 35 micro hydropower systems have been set up in communities, providing continuous energy access to 3,800 families, schools, rural health centres, community centres, microenterprises and communication centres, avoiding 24,000 tonnes of CO_2 emissions annually. These efforts have contributed to both biodiversity protection and the well-being of families (via increased savings, improved education and increased income generation opportunities).
- Through the LECB, six countries are undertaking efforts to systematize their national GHG emissions reporting in priority sectors.
- UNDP has supported the development of 13 NAMAs, which account for 40 percent of the NAMAs in the region. One of the most unique is **Costa Rica's** livestock NAMA, which was developed under the LECB to define a clear roadmap for how to apply the country's "eco-competiveness" concept to the industry, focusing on increasing sustainability rather than reducing labour. A group of 'champion' farmers tested the proposed low emission measures and technologies as a first step in scaling up to adopting the most successful ones in 80 percent of farms in the country. The NAMA will lead to wider environmental benefits, such as more forest cover and biodiversity, as well as improved resilience.
- Support is being provided to seven countries to design sectorial low-emission development strategies (and the associated measuring, reporting and verification systems) as the framework for NAMA implementation through the LECB programme. In the case of **Colombia**, eight sectorial mitigation action plans have been prepared and are now being piloted for implementation at the subnational level.

- Support provided to the government of **Uruguay** to put in place a policy framework for independent power producers in the wind energy sector. This legislation has reduced power market risks surrounding potential investment. 340 MW of wind farms are now operational, with a total of 1 GW in investment anticipated by the end of 2015. Increased wind investment has already resulted in lower retail tariffs for consumers.

GENDER

- The skills of women have been strengthened in a community in **Paraguay** to help protect the natural heritage and culture of indigenous people. 25 women out of 44 indigenous members of the community participated in 5 technical training workshops.
- Gender Mainstreaming into the **Mexican** Special Climate Change Programme (PECC 2014-2018). To date, the PECC includes 8 gender specific lines of action, 11 strategies and 35 cross-cutting lines of action.[39]

HONDURAS

CLIMATE RISK MANAGEMENT HELPS URBAN AREAS ADAPT TO EXTREME WEATHER EVENTS

Several urban areas around Tugucigalpa have been seriously affected by floods and landslides that are a result of torrential rains. Through a project funded by the AF, UNDP is helping these communities adapt to increasing extreme weather events. This has been accomplished by:

- Strengthening institutional structures and frameworks by mainstreaming climate risks into water management.
- Introducing technologies that help improve water management.
- Supporting the gathering and dissemination of meteorological information.
- 8,100 families are benefitting from new rain harvest facilities, runoff control and other adaptation measures; 60,000 ha of forest are being protected along the main watershed in which Tegucigalpa is located; and 13,000 households vulnerable to flooding and landslides are being covered by 4 EWSs.

EL SALVADOR

ENERGY EFFICIENCY IN PUBLIC BUILDINGS

A UNDP/GEF -supported project has changed the way the public sector, a main end-user of energy in El Salvador, manages energy use in its buildings. This project was implemented together with the National Energy Council.

- Energy efficient measures introduced in public sector buildings have reduced their impact on the environment in terms of GHG emissions. In 2014/2015, 23 energy efficient initiatives were implemented in 10 public hospitals, a children's rehabilitation center, and a centre for the elderly, resulting in savings of over $130,000 annually. These savings, due to lower operating costs, have been used for enhancing patient care and purchasing medicine (e.g. the capacity to provide a therapeutic treatment increased from 10 patients per week to 10 patients per day).
- The project also supported the launching of El Salvador's National Strategy for Energy Efficiency in the public sector, which establishes targets in energy consumption for the national government and also defines a financial mechanism to achieve these targets.
- In addition, through a specialized energy efficiency course developed in collaboration with Universidad Centroamericana 'José Simeón Cañas' and the National Energy Council, 72 public institutions have received technical training on equipment and techniques that save energy and reduce GHG emissions.
- The project placed particular emphasis on the strengthening of the 112 Committees on Energy Efficiency (COEEs): multidisciplinary working groups responsible for ensuring the efficient management of energy by public institutions.
- Further sustainable social benefits of the project include: improved working conditions for hospital staff and the promotion of gender equality in the formation of the COEEs. In 2015, $3 million was invested in energy and environment sector by public institutions, due to successful efforts by this project.

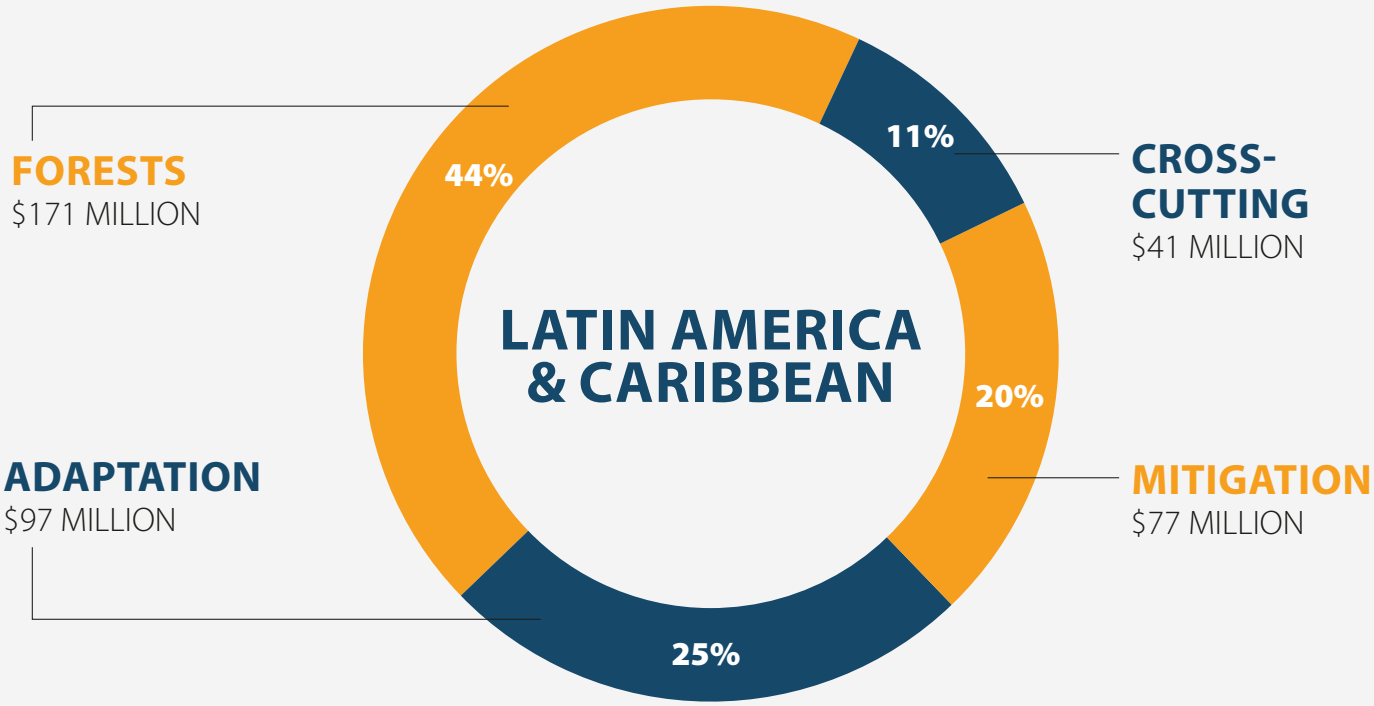
ECUADOR

FINALIZING WORK ON THE FIRST PHASE OF REDD+

Ecuador is presently finalizing its work on Phase 1 of the REDD+ readiness process and is now turning to implementing its national REDD+ action plan. With the support of the UN-REDD Programme (FAO, UNDP and UNEP), the Ministry of Environment has:

- Finalized the first national forest inventory and strengthened the National Forest Monitoring System.
- Supported a participatory process to engage national and local levels stakeholders during the REDD readiness phase.
- Assisted in consolidating and organizing frequent and regular meetings of a national REDD platform, gathering representatives from civil society organizations and indigenous peoples.
- Elaborated the REDD National Action Plan based on a detailed, geographically explicit analysis of drivers of deforestation; a mapping of possible social and environmental co-benefits; and a prioritization of policies and measures to be implemented at the national and local levels. The action plan is embedded in the national development plan, and the recommendations for the institutional arrangements will be implemented in 2016.
- Developed a legal instrument related to free, prior and informed consultation with the support of the Office of the High Commissioner.
- Developed general guidelines for a national Safeguards Information System for REDD+.
- Ecuador is now in the process of mobilizing funds for the implementation of its national REDD+ action plan, and will seek to receive funds from the corresponding GCF window and other mechanisms.

UNDP has invested $386 million in 27 countries across the Latin America and Caribbean region



CHALLENGES AND OPPORTUNITIES

- Access to climate finance remains a challenge; national bodies need to increase capacity so as to better access climate funds. Finding adequate financing to support NAMAs and REDD+ implementation is a priority.
- The region has been a leader in designing NAMAs, typically framed within comprehensive low-emission, climate resilient policy frameworks.
- However, climate change efforts need to be further integrated. In particular, ecosystem-based adaptation, reducing risks to climate-induced disasters and adaptation-mitigation (energy) linkages at the territorial level need to be better aligned to national, territorial and sectoral development plans.
- Countries have identified a wide variety of actions that could be taken to reduce their vulnerability to climate change.[40,41]
- However, there is a need to address the underlying causes of disaster vulnerability, as well as to ensure that development processes integrate risk reduction measures.
- There is a need to improve technical capacities in planning and meteorological information systems.
- The full engagement of critical stakeholders in REDD+ remains a challenge.

SCALING-UP ACTION

- To increase the resilience of coastal ecosystems and reduce disaster-related risks, the Government of **Cuba** is using an integrated approach to adaptation through an alliance of the Ministries of Agriculture; Food and Fisheries; and Science, Technology and the Environment. The Ministries are supporting local governments, communities and productive sectors to implement cost-effective climate-resilient agricultural practices and create special zones for sustainable fisheries.
- Through the REDD+ readiness processes, the participation and empowerment of civil society, indigenous peoples, Afro-descendants and campesino leaders in **Colombia**, **Costa Rica**, **Honduras**, **Mexico**, **Panama** and **Peru** has been strengthened.
- An innovative national small-grants Community Climate Change Adaptation Fund is being established in LAC to help fishing communities increase catch size and prevent spoilage (via refrigeration equipment).
- **Chile** launched an online voluntary carbon management reporting programme, HuellaChile, in March 2015 under LECB after extensive consultations, capacity building and piloting with private sector companies.
- **Peru** is designing a national NAMA registry system under LECB to track national mitigation efforts; the registry will also include quality standards criteria to assist the NAMA approval committee.

THE FUTURE AND ON-GOING EFFORTS

- A pipeline of $172 million from GEF, SCCF FCPF, UN-REDD, the Government of **Spain** and BIOFIN (**EU**, **Flanders (Belgium)**, **Germany**, **Norway** and **Switzerland**) will be dedicated to mitigation, adaptation and climate finance initiatives (including REDD+).
- Support provided for the development of 26 National Communications and 14 Biennial Update Reports.
- The LAC Regional Programme on Climate Change will continue to foster NAMA development and implementation; the undertaking of Climate Public Expenditure and Institutional Reviews; and studies on the co-benefits of mitigation and adaptation initiatives.
- Implementation of the REDD+ readiness processes will continue in 11 countries.
- The region has been a leader in the design and implementation of NAMAs. At least 12 detailed NAMAs will be completed under the LECB alone by the end of 2016.
- All LAC countries share concerns related to agriculture and nearly all have prioritized adaptation actions related to freshwater resources, coastal resources, biodiversity and forestry.

UNDP'S SIGNATURE PROGRAMMES

UNDP'S SIGNATURE PROGRAMMES FOR ADAPTATION

1. **Supporting Integrated Climate Change Strategies:**
   Assisting governments to develop and strengthen policies, institutions, capacities and knowledge for integrated green, low-emission and climate resilient development, including financing mechanisms.

2. **Advancing Cross-sectoral Climate Resilient Livelihoods:**
   Supporting countries to achieve sustainable development and livelihoods in a changing climate.

3. **Ecosystem-Based Adaptation:**
   The use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change—including sustainable management, conservation and restoration of ecosystems—as part of an overall adaptation strategy that takes into account the multiple social, economic and cultural co-benefits for local communities.

4. **Fostering Resilience for Food Security:**
   Enabling more resilient food production systems and practices by facilitating access to climate information for small farmers, and by improving land and water management practices.

5. **Climate Resilient Integrated Water Resource and Coastal Management:**
   Improving water and ocean governance in the world's major freshwater and marine trans-boundary waters.

6. **Community Resilience through Integrated Landscape Management:**
   Empowering community organizations and networks to achieve inclusive, resilient and sustainable development and develop local solutions for global environmental management.

UNDP'S SIGNATURE PROGRAMMES FOR MITIGATION

1. **Promoting Access to Clean and Affordable Energy:**
   Supporting countries to improve energy efficiency and promote renewable energy (such as solar, wind and hydro) and providing access through off-grid, on-grid or mini-grid solutions.

2. **Promoting Low-Emission Urban and Transport Infrastructure**
   Making the use and supply of energy more environmentally sustainable, affordable and accessible; and to promote low emission and climate resilient urban and transport infrastructure.

3. **Supporting Access to New Finance Mechanisms:**
   Assisting developing countries to attract and direct public and private investment towards mitigation and low-carbon development and promote climate finance.

ABBREVIATIONS

AF	Adaptation Fund
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ECIS	Europe and Commonwealth of Independent States
EWS	Early Warning System
GEF	Global Environment Facility
GCF	Green Climate Fund
INDCs	Intended nationally-determined contributions
LAC	Latin America and the Caribbean
LDC	Least developed country
LDCF	Least Developed Countries Fund
LECB	Low Emission Capacity Building Programme
LEDS	Low Emissions Development Strategies
MRV	Measuring, Reporting, and Verification
NAMAs	Nationally Appropriate Mitigation Actions
NAPAs	National Adaptation Programmes of Action
NAPs	National Adaptation Plans
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SCCF	Special Climate Change Fund
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

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