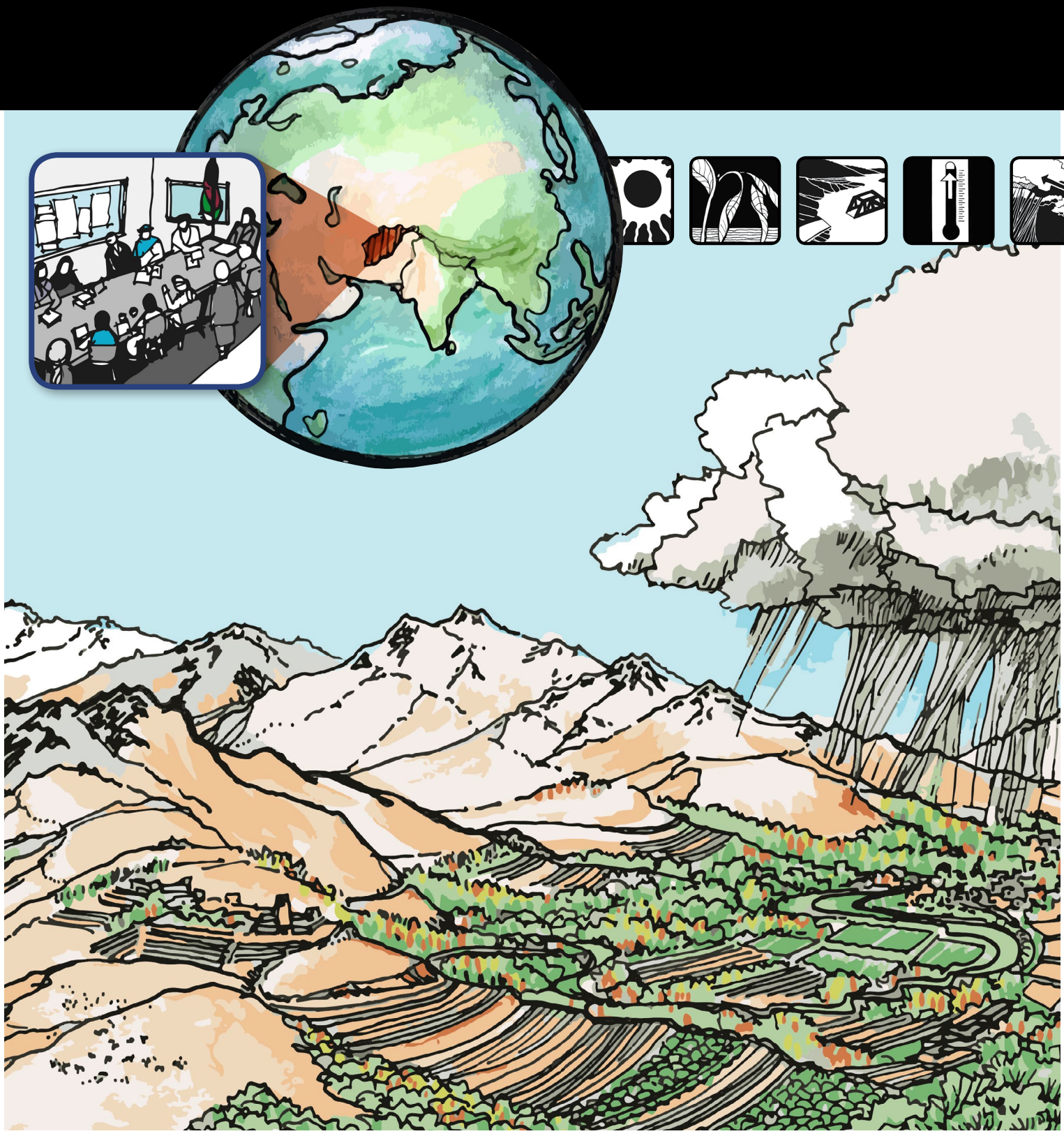
Islamic Republic of Afghanistan

CLIMATE CHANGE AND GOVERNANCE IN AFGHANISTAN



CLIMATE CHANGE AND GOVERNANCE IN AFGHANISTAN

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1. EXECUTIVE SUMMARY

This report provides a broad overview of the landscape of climate change governance in Afghanistan in order to identify past achievements and current and future entry points for the further mainstreaming of climate change into the country's national development framework. In doing so, this report complements existing research and literature on climate change in Afghanistan, such as the National Adaptation Programme of Action and National Communications under the UNFCCC, to bring the urgency of climate change to the attention of the Government, non-governmental organizations, civil society, academia, and the international development community.

This report focuses primarily on the government institutions, legislative frameworks, sectoral policies and strategies, and interministerial coordination mechanisms relevant to addressing Afghanistan's urgent climate change adaptation and mitigation needs. Particular emphasis is placed on the most crucial areas identified in Afghanistan's National Adaptation Programme of Action: agriculture, biodiversity and ecosystems, energy and infrastructure, forests and rangelands, natural disasters, and water. The urgency of mainstreaming climate change into Afghanistan's development processes cannot be overstated. In 2015, the National Environmental Protection Agency (NEPA) and the United Nations Environment Programme (UNEP) developed the most up-to-date and detailed climate change projections for Afghanistan, which suggest that by 2100 the country will see a strong increase in mean annual temperature coupled with an overall decrease in water availability. These changes will have myriad impacts on Afghanistan's diverse ecosystems, as well as the plants and animals that inhabit them. Considering that approximately 80 percent of Afghanistan's population relies directly on the natural resource base for their livelihoods, these climatic changes also have the potential to seriously disrupt the foundation of the country's economy, stability, and food security.

Afghanistan is already highly vulnerable to natural hazards, and a changing climate is likely to significantly exacerbate their impacts unless measures are taken to strengthen the country's adaptive capacity. Mainstreaming climate change into Afghanistan's development processes is an essential step towards realizing that adaptive capacity. Thus, coordinated action is urgently needed among diverse partners and across numerous sectors to ensure that the risks of climate change are minimized and that development progress is not undermined.

Key recommendations from this report include:

- Afghanistan's Climate Change Strategy and Action Plan (ACCSAP) should be urgently finalized and implemented as a primary step towards mainstreaming climate change into national development plans.
- Comprehensive capacity-building programmes should be implemented at the national, provincial, and local levels in order to raise awareness of, and support for, the mainstreaming of climate change within all levels of the country's governance processes.

- Accurate and sound scientific analysis of climate change impacts and adaptation measures should be brought to the attention of policy-makers to encourage further mainstreaming of climate considerations into sectoral planning and reduce the adverse impacts of climate change on the country's population.

- Civil Society and Non-governmental Organizations (NGOs), particularly involving women and youth, should be involved in awareness-raising events and capacitybuilding activities to generate greater public awareness of climate change and foster greater political will to address Afghanistan's urgent climate change needs.
- Climate change should be integrated into higher education curricula to promote further mainstreaming across relevant disciplines as well as build national capacity to understand and apply key climate change adaptation and mitigation approaches.
- The technological needs for both adaptation and mitigation should be identified for each sector and vulnerable area. Current efforts, which include those through the Climate Technology Centre and Network (CTCN), should be expanded and prioritized in the national development agenda.
- Public-private partnerships should be promoted to increase availability of funds and resources for climate-friendly technologies, particularly in the areas of decentralized energy and rural electrification.
- Infrastructure projects should integrate climate-proofing (preferably with ecosystem-based adaptation) in order to better protect roads, bridges, water supply, energy, and other infrastructure from extreme weather events and ensure that development progress made in recent years is not undone.
- The Ministry of Agriculture, Irrigation, and Livestock (MAIL) and NEPA should launch a work programme of scientific research and piloting of drought-resistant crop varieties and Affordable Micro-irrigation Technology (AMIT) in order to build a body of knowledge and institutional capacity to better address a warmer and drier future climate.
- In rural areas without access to electrical grids, decentralized, low emission, and climate-friendly energy projects should be prioritized in order to provide accessible energy to rural populations and stimulate rural economic growth.
- A comprehensive survey of forest and rangeland species (flora and fauna) should be conducted in order to identify which species are most threatened by and resilient to climate change, and subsequently integrate these findings into national forestry and rangeland management policies.
- In rural areas, community-based water harvesting, water conservation, and watershed management techniques and practices should be promoted in order to improve management of existing water resources and decrease vulnerability to droughts.

2. INTRODUCTION

2.1. OVERVIEW OF CLIMATE CHANGE AND PROJECTIONS FOR AFGHANISTAN

Climate change refers to alterations in the earth's atmosphere and environment that have long-term effects, such as climate warming, changes in precipitation levels, or increased frequency of extreme weather events at the global and regional levels. Changes to and fluctuations in the earth's climate are constantly happening as a result of natural processes, but since the Industrial Revolution, human activity has caused the earth's climate to enter a period of global warming. This global warming can largely be attributed to increased emissions of Greenhouse Gases (GHGs), such as carbon dioxide, that are released into the atmosphere when fossil fuels are burned. Although scientists continue to debate the exact mechanisms behind climate change, there is an overwhelming consensus that recent changes in the earth's climate, including increases in average global air and ocean temperatures, widespread melting of snow and ice, and rising global sea levels, are the result of human activity.

The United Nations Framework Convention on Climate Change (UNFCCC), which Afghanistan joined in 1992, defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."[1] This UNFCCC definition draws a distinction between human induced climate change and natural climate variability, and is the definition that is applied in this report.

Attempts to limit the impacts of climate change can generally be divided into the two categories of climate change mitigation and climate change adaptation. Climate change mitigation includes efforts to limit GHG emissions in order to stabilize the global atmosphere, whereas climate change adaptation includes developing approaches to cope with and limit the negative impacts of climate change. Both climate change mitigation and adaptation aim to reduce the vulnerability of people, regions, and sectors to the expected impacts and risks of climate change.

In order to understand the future impacts of climate change, climate scientists use mathematical models that simulate the current state of the global climate and the dynamic and complex interactions of the atmosphere, oceans, land surface, glaciers and sea ice. These climate models are derived from scenarios of varying levels of increased future GHG emissions, in order to generate projections of possible future climates. Since the exact amount of future GHG emissions cannot be known today, scientists use different scenarios that vary from the best-to worst-cases. The resulting projections can then by analysed in order to develop climate change mitigation and adaptation plans.

In Afghanistan, the lack of robust environmental and climate data presents numerous challenges for the development of comprehensive climate projections. Nevertheless, based on currently available climate data analysed in conjunction

1. United Nations (1992). For the text of the UN Framework Convention on Climate Change, see: http://unfccc.int/resource/docs/convkp/conveng.pdf

with regional climate models from the Cordex experiment, NEPA and UNEP have developed Afghanistan's most detailed climate change projections to date. The climate change projections of these models are based on GHG scenarios, the current generation of which are known as Representative Concentration Pathways (RCPs).[2] Overall, these projections show a strong increase in mean annual temperature, considerably higher than global mean projections, when compared to a baseline period of 1986-2006 (see Fig. #1 and Fig. #2).

More specifically, the optimistic (RCP4.5) scenario shows Afghanistan warming approximately 1.5°C until 2050, followed by a period of stabilization and then additional warming of approximately 2.5°C until 2100. In contrast, the pessimistic (RCP8.5) scenario shows extreme warming across the whole country of approximately 3°C until 2050, with further warming by up to 7°C by 2100. Under both scenarios there are regional differences, with higher temperature increases expected at higher altitudes than the lowlands. In the Central Highlands and the Hindu Kush, warming over a 30-year period in the near future (2021-2050) is projected to range from 1.5°C to 1.7° compared to the base period (1976-2006), while in the lowlands the increase ranges from 1.1°C to 1.4°C. The band of uncertainty for these projections is approximately +/- 2°C and all model runs show the same tendency, confirming projections from earlier studies that relied solely on general circulation models (GCMs)[3].

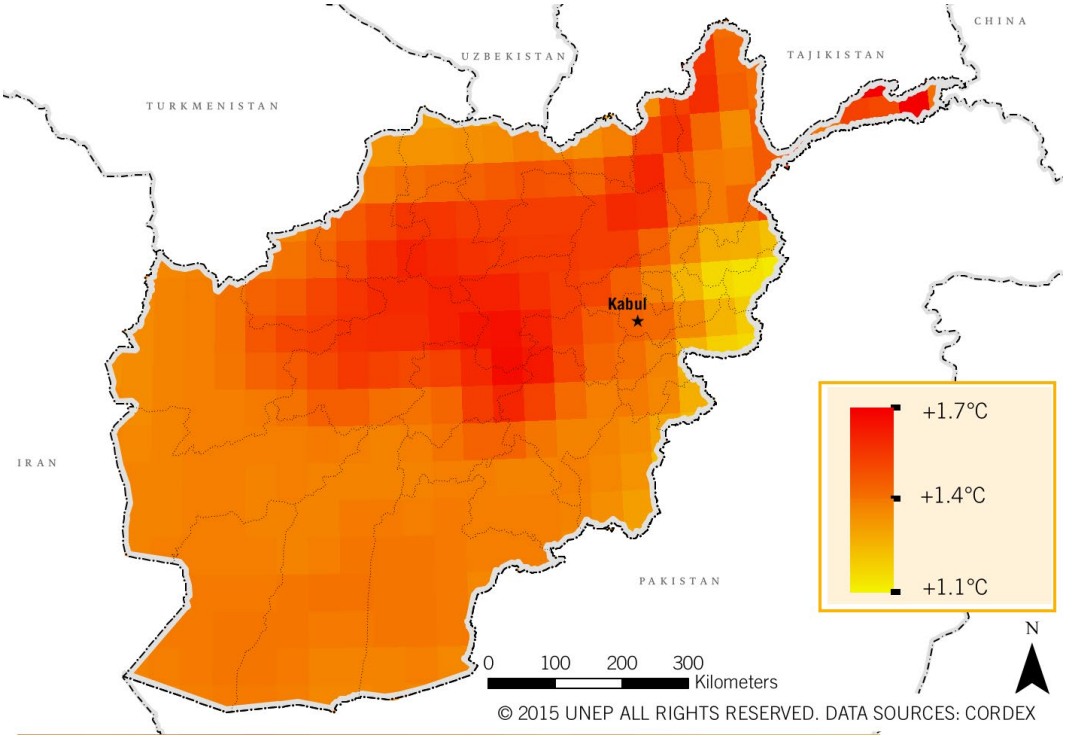


Figure 1. Difference in mean annual temperature between a near future period (2021-2050) and the base period (1985-2006) using RCP 4.5. All grids of all models show a positive trend.

2. Representative concentration pathways (RCPs) are GHG emission scenarios adopted by the IPCC to describe four possible climate depending on the levels of future global GHGs emitted. There are four RCPs: 1) RCP2.6, which assumes that GHG emissions peak between 2010-2020 and then decline; 2) RCP4.5, which assumes that GHG emissions peak around 2040 and then decline; 3) RCP6, which assumes that GHG emissions peak around 2080 and then decline; and 4) RCP8.5, which assumes that GHGs emi sions continue to rise throughout the 21st century.
3. Savage, M., et. al. (2008). Socio-economic Impacts of Climate Change in Afghanistan. Oxford: Stockholm Environment Institute.

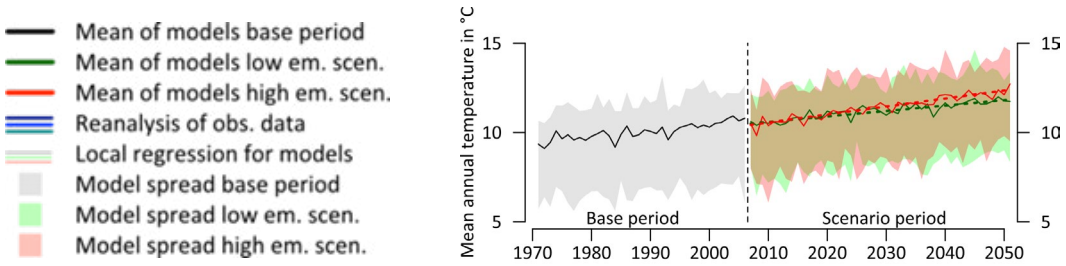


Figure 2. Trends in mean annual temperature for Afghanistan of seven different regional climate models and the RCPs 4.5 (green) and 8.5 (red). The lines are the model means and the band of uncertainty of all models is depicted in brighter colours.

In contrast to temperature projections, the uncertainty of model projections for precipitation is higher, and regional and seasonal differences are more distinct. The mean of the model ensembles shows a significant (α=0.05) decrease of precipitation during springtime (March-May) for the North, the Central Highlands and the East from 2006 until 2050 between 5-10 percent. This decrease is offset by a slight increase of precipitation during autumn and wintertime (October-December) in these regions. For the Hindu Kush, the model ensembles project a significant and substantial increase in precipitation during the winter season of approximately 10 percent, whereas during spring season precipitation is projected to stay stable. For the arid South of the country, the models do not project significant trends for precipitation. In terms of changes to the frequency of annual rainfall, visual analysis of the scenarios does not reveal any significant change (see Fig. #3 and #4).

Overall, the decrease of precipitation during springtime is particularly relevant since this is the period of main plant growth for agricultural production. In addition, this precipitation decrease is projected to take place in the regions with the highest agricultural productivity of Afghanistan (East, North, and Central Highlands). In combination with the overall increase in temperature and the related increase in evapotranspiration across the country, this will most likely negatively impact the hydrological cycle, agricultural productivity, and availability of water resources.

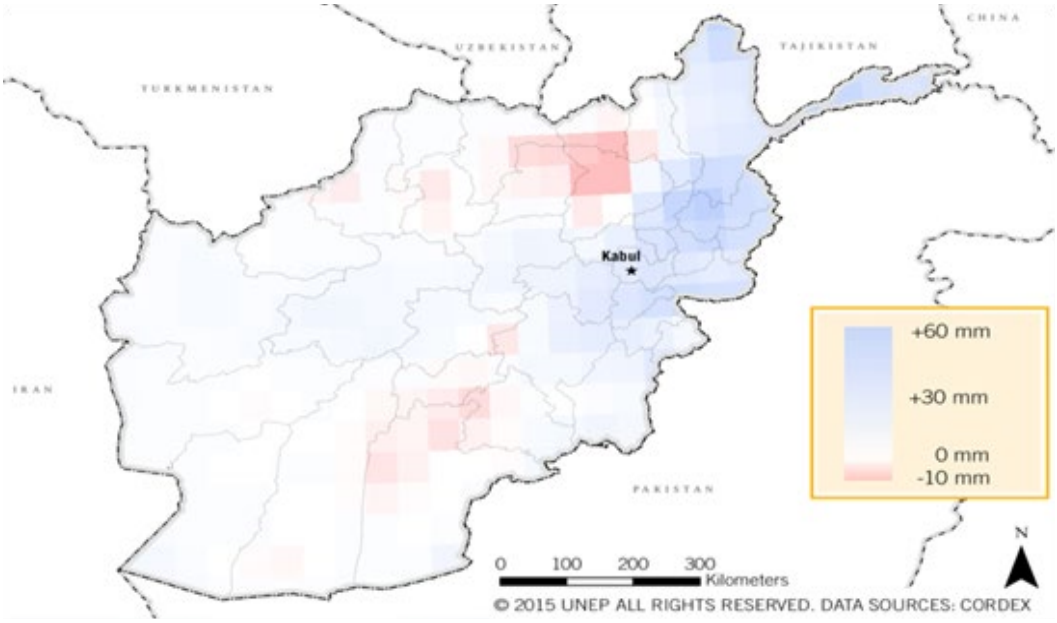


Figure 3. Difference of annual precipitation between a near future period (2021-2050) and thebase period (1985-2006) as mean of eight different regional climate models for the representative concentration pathway 4.5.

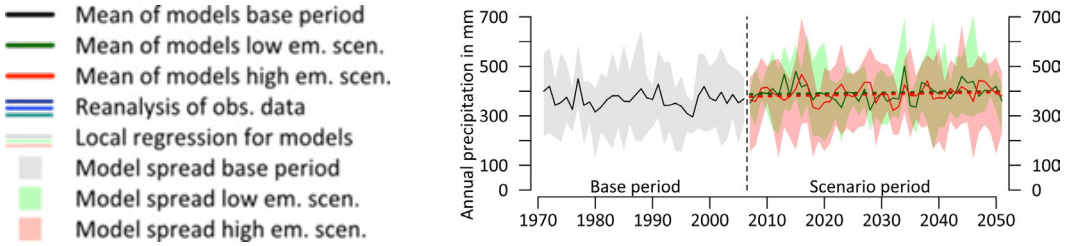


Figure 4. Trends in annual precipitation for Afghanistan of seven different regional climate modelsand the representative concentration pathway 4.5 (green) and 8.5 (red). The lines are the modelmeans and the band of uncertainty of all models is depicted in brighter colours.

Based upon these climate change projections it is evident that Afghanistan's environment will experience considerable change over the remainder of this century.

Thus, it is imperative that climate change adaptation, based on sound scientific analysis of those changes and uncertainties, be integrated into sectoral planning to reduce the negative impacts of climate change in Afghanistan and increase resilience. This is particularly important in rural areas where communities rely on agricultural production as a primary means of subsistence and changes in the seasonality of precipitation may present further challenges for agricultural productivity and rural livelihoods.

2.2. OVERVIEW OF CLIMATE CHANGE GOVERNANCE IN AFGHANISTAN

Governance refers to the processes and systems of governing, specifically how decision-makers interact and are involved in the creation of institutions and the enforcement of decisions through laws, policies, or strategies.[4] Climate governance refers to, among other things: the relevant national government institutions that oversee sectors impacted by climate change (water, land, agriculture, etc.); the climate change coordination mechanisms and structures between these institutions; research, advocacy, and awareness-raising by non-governmental stakeholders; national climate change policies, strategies, and plans; and international multilateral environmental agreements (MEAs), all of which aim to address the causes and impacts of climate change.

2.2.1. GOVERNMENT STRUCTURE AND DEVELOPMENT FRAMEWORK

The governance of climate change in Afghanistan is still nascent as the country continues to overcome the effects of more than three decades of conflict that have displaced millions of people, destroyed critical infrastructure, and weakened institutions. Since the fall of the Taliban in 2001, Afghanistan has transitioned to a democratic Islamic republic comprised of executive, legislative, and judicial branches, whose powers are enshrined by the Constitution at the highest levels in the President, National Assembly, and Supreme Court, respectively [5]. The Constitution also establishes that the administration of the country be divided into the units of ministries at the central level and provinces at the local level. Each province is governed by a publicly elected Provincial Council and a presidentially appointed Governor. Provinces are further sub-divided into the units of districts and villages, each of which can establish publicly elected councils to oversee activities and ensure active public participation in local level administration [6]. In urban areas, municipalities are established to administrate city affairs, and governed by a publicly elected Mayor and Municipal Council [7]. Across the country, local level administration also includes the Community Development Councils (CDCs), established under the National Solidarity Programme (NSP) in order to lead community-based management of reconstruction and development projects, and lay the foundations for strengthened community-level governance.

At the central, provincial, and local levels, the **Afghanistan National Development Strategy (ANDS)** functions as the country's overall roadmap for national development and was approved by the Cabinet of the Islamic Republic of Afghanistan in April 2008.The ANDS is based on **Afghanistan's Millennium Development Goals (MDGs)** and is structured along the three pillars of i) security, ii) rule of law and

4 United Nations (2006).
5 Afghanistan (2004). Constitution of the Islamic Republic of Afghanistan.
6 Ibid., Art. 140.
7 Ibid., Art. 141.

governance, and iii) economic and social development. The ANDS makes no mention of climate change; however, the economic and social development pillar does target the areas of water and natural resource management, agriculture, energy, and rural development. Moreover, the ANDS identifies the environment as "a cross-cutting issue that underpins the entire social and economic development framework for the country" and developed the **National Environment Strategy (NES)** that places particular emphasis on strengthening the capacity of NEPA to perform its regulatory, coordination, and oversight functions, as well as other ministries to actively address environmental considerations in their programme design .[8]

At the 2010 Kabul Conference, Afghanistan's national development goals were further refined and prioritized through the establishment of 22 **National Priority Programmes (NPPs)** in order to foster greater national ownership over development initiatives and more effectively achieve the objectives of the ANDS. These NPPs are further categorized and grouped into the six thematic clusters: i) security, ii) human resource development, iii) infrastructure development, iv) private sector development, v) agriculture and rural development, and vi) governance.

As environment is a crosscutting theme in the ANDS it is not surprising that each of the six NPP clusters has aspects relevant to climate change, ranging from the country's governance structures to the adverse impacts of climate change on infrastructure, security, and economic development. However, the **Agriculture and Rural Development (ARD) cluster** is the most relevant to climate change as it covers the vulnerable areas of agriculture, water, and natural resource management. Of the four NPPs in the ARD cluster, the following two make explicit mention of climate change:

- **ARD NPP #1: National Water and Natural Resource Management,** which aims "to ensure effective utilisation, together with proper management, of existing water and other natural resources to accelerate agricultural productivity and provide safe drinking water and a hygienic environment, with viable rural energy options for rural prosperity." [9] This NPP also aims to increase Afghanistan's adaptive capacity to climate change and natural disasters, and in doing so makes extensive references to climate change, including the identification of climate change adaptation and mitigation strategies for the water and agriculture sectors[10]. These strategies include improving water resource management, integrating drought scenarios into long-term water sector planning, developing irrigation facilities, promoting drought-resistant crop varieties, developing capacity for hydro-meteorological observation and analysis, and integrating of climate change modelling capacity into policy making processes. Additional references to climate change include the increasing vulnerability of the agriculture sector, threats to food security, decreasing crop yields, increasing food prices, and rangeland degradation, amongst others.

8 Afghanistan (2008). Afghanistan National Development Strategy (ANDS) 2008-2013, p. 17. Available at http://www.thekabulprocess.gov. af/images/ands-docs/ands-english.pdf
9 Afghanistan (2010a). Agriculture and Rural Development Cluster National Priority Programme 1: National Water and Natural Resources Development, p. 7. Available at: http://www.thekabulprocess.gov.af/images/JCMBdocs/19th/ARD_NPP_1_Water%2and%2 Natural%20 Resources_Final_Draft.pdf
10 Ibid., p. 20 & 56

- **ARD NPP #2: National Comprehensive Agriculture Production and Market Development,** which aims "to improve sustainable agriculture production and productivity, and increase on- and off-farm enterprises contributing to food security and inclusive economic growth and reduced dependency of subsistence and marginal farmers and labourers on narcotic crops." [11] Within this NPP, climate change is identified as a primary threat to food and nutrition security, as well as an underlying cause of rangeland degradation, but no recommendations or suggestions are made for reducing the negative impacts of climate change.

The inclusion of climate change in these NPPs demonstrates the constructive steps that the Government has taken towards integrating climate considerations into national development planning, but much more work remains to be done in order to effectively build the country's adaptive capacity. While much of this responsibility lies with the Government, the governance of climate change is a broad area that requires the additional inputs, contributions, and support from non-governmental stakeholders as well.

2.2.2. NON-GOVERNMENTAL STAKEHOLDERS

In addition to government institutions, the governance of climate change includes a wide spectrum of civil society, non-governmental, academic, private, and communitybased organizations and structures. Although climate change is expected to impact all areas and levels of the country, not all sectors or people will be affected equally or in the same ways. Thus, coordinated action and support from all stakeholders is needed as they each have their own unique capacities and roles to play in building the country's adaptive capacity and resilience.

The involvement of **civil society and non-governmental organizations (NGOs)** is essential for addressing climate change impacts, particularly in terms of community organization and representation of people's needs and interests. Public participation in climate change governance is vital to ensuring that a diversity of voices are taken into account by the Government in order to influence policy and planning, as well as provide oversight for their transparent and accountable implementation. Civil society groups and NGOs have the added role of raising public awareness and mobilizing local communities, particularly in the areas of planning, design, and implementation of adaptation activities. These roles are especially necessary in a country like Afghanistan where government institutions have limited capacity and resources to undertake climate change adaptation activities in all villages across the country.

Moreover, as Afghanistan's population is diverse and not all needs are uniform, it is important that government institutions and non-government stakeholders represent all the voices of their constituents. In particular, the impacts of climate change are not gender-neutral,therefore it is imperative that men's and women's specific needs and priorities are identified and addressed at all levels of climate change governance.

11 Afghanistan (2010b). Agriculture and Rural Development Cluster National Priority Programme 2: National Comprehensive Agriculture Production and Market Development, p. 8. For full text, see: http://www.thekabulprocess.gov.af/images/JCMBdocs/19th/ARD_NPP- 2_Agriculture_Final_Draft.pdf

In Afghanistan, **women** provide a wide array of services to ensure the function and wellbeing of their households, including: gathering fuel for cooking and heating, collecting water, growing and harvesting food, educating children, protecting family health and sanitation, and safeguarding traditional knowledge to manage and preserve natural resources.[12] Nevertheless, women have been traditionally excluded from decision-making processes that affect them and their families, making it all the more important that women's voices and needs be represented in planning and action on climate change to ensure that adaptive capacity is built across the whole of the country's population.

Similarly, the voices, needs, and priorities of **youth** must be recognized and integrated into climate change governance because they are the future of the country and will inherit the environmental degradation of current and past generations. Afghanistan is already one of the fastest growing and youngest countries in the world; 2014 estimates place more than 60 percent of the population below 25 years of age.[13] As a majority of the country's population, it is imperative that youth be actively involved in addressing Afghanistan's urgent climate change needs and priorities. It is also important to recognize that youth, as a category, cuts across ethnic, linguistic, religious, gender, class, and other socio-cultural lines to represent the youngest segment of the population. Thus, increasing involvement and engagement of youth on climate change governance has widespread benefits for disseminating information and raising awareness across a diverse group of stakeholders, and helping build nationwide adaptive capacity and resilience to climate change.

Academic institutions also have a vital role to play in both educating the next generation of environmental leaders and leading scientific research on climate change in Afghanistan. In particular, academic institutions should be at the forefront of developing climate change projections for the country, as well as conducting research on the expected impacts of climate change across all sectors and vulnerable areas. In Afghanistan, scientific climate research needs to be seen as a critical part of an integrated approach to addressing climate change by building the knowledge base and supporting the development of broad consensus around the country's climate change strategy and plan. To achieve this, the government and international community should cooperate with academic institutions, especially universities and other higher education institutions, to increase the capacity of researchers and professors, support the development of new curricula on climate change (science, mitigation, ecosystem-based adaptation, etc.), as well as mainstream climate change into existing curricula in the natural sciences, social sciences, humanities, health, and other vocational training programmes.

12 UNEP (2009). Women and Natural Resources in Afghanistan, Kabul: United Nations Environment Programme.
13 Afghanistan (2014b). Afghanistan Statistical Yearbook 2013-2014. Kabul: Central Statistics Organization.

The potential impacts of climate change on economic and business activities also necessitate the involvement of the private sector as a key stakeholder group for climate change governance. Private sector involvement in climate change can take diverse forms, including the promotion of clean and climate-friendly technologies for climate change mitigation, as well as the adoption of risk reduction measures, climate proofing of value chains, and innovation of new technologies for climate change adaptation. Economic development and private sector investment feature strongly in Afghanistan's development framework, especially in the energy and infrastructure sectors where large investments are needed upfront, but relevant policies, plans, and strategies make scarce mention of climate change. Considering Afghanistan's extensive development needs and relatively young and growing private sector, the Government should capitalize on existing opportunities for promoting innovative climate-friendly technologies and approaches to spur economic growth and private sector investment, particularly in areas like rural electrification, renewable energies, and transportation infrastructure, amongst others.

2.3. CLIMATE FINANCE AND TECHNICAL RESOURCES

Afghanistan is eligible to access a number of multilateral and bilateral financial and technical resources to address its climate change adaptation and mitigation needs. The largest multilateral donor for climate change is the Global Environment Facility (GEF), which Afghanistan has successfully accessed for financial resources and support in the preparation of its National Communications under the UNFCCC, the National Adaptation Programme of Action for Climate Change (NAPA), the National Capacity Needs Self-assessment for Global Environmental Management (NCSA), and a number of other mid- and full-size climate change projects.

The GEF has several specialized funding modalities, the largest of which is the GEF Trust Fund that uses the System for Transparent Allocation of Resources (STAR) to provide financial resources to countries, in line with the three Rio Conventions, in the areas of climate change, biodiversity, and land degradation. In the sixth and latest replenishment period of the GEF Trust Fund, the STAR has allocated to Afghanistan an indicative total budget of USD11.3 million, of which USD3.0 million is for climate change, USD3.9 million is for biodiversity, and USD4.4 is for land degradation.[14]

In addition, in 2001 the GEF established the Least Developed Countries Fund (LDCF) to provide financial resources, to assist least developed countries in addressing their most urgent and immediate climate change adaptation needs in recognition that delays in addressing adaptation needs could increase vulnerabilities or costs in the future. Through the LDCF, Afghanistan has accessed funds for the preparation of its National Communications, the NAPA/NCSA, and execution of its three active full-size climate change adaptation projects (LDCF-1, LDCF-2, and LDCF-3).

Similarly, the GEF's Special Climate Change Fund (SCCF) provides additional complementary funds to the world's most vulnerable countries to strengthen their adaptive capacity to climate change. The SCCF's two active funding windows are in the areas of climate change adaptation and technology transfer. Areas and sectors eligible under the window of climate change adaptation include water resource management,

14 Global Environment Facility (2014). GEF-6 Indicative STAR Allocations. Available from: https://www.thegef.org/gef/STAR/GEF6_country_allocations

land management, agriculture, health, infrastructure, fragile ecosystems, integrated coastal zone management, and climate disaster risk management. While the window for technology transfer can support the implementation of technology needs assessment, dissemination of technology information, and capacity building for technology transfer.

In addition to the GEF, the Adaptation Fund was established under the UNFCCC and Kyoto Protocol in order to provide financial resources for concrete climate change adaptation activities. All countries that are party to the Kyoto Protocol are eligible to access resources from the Adaptation Fund, but must use either a national, regional, or multilateral implementing entity accredited by the Adaptation Fund. As of mid-2015, Afghanistan does not have an accredited national implementing entity, but eligible multilateral implementing entities present in Afghanistan include the Asian Development Bank (ADB), UNDP, UNEP, the United Nations Educational, Scientific, and Cultural Organization (UNESCO), the United Nations World Food Programme (WFP), and the World Bank.

Similarly, the Green Climate Fund (GCF) was established in 2011 under the UNFCCC to promote low-emission and climate-resilient development pathways by providing financial resources to developing countries to limit or reduce GHG emissions and adapt to the impacts of climate change. All developing countries party to the UNFCCC are eligible to apply for funds from the GCF via their Nationally Designated Authority (NDA), which in Afghanistan is NEPA's Climate Change Division. In May 2015, the GCF reached its threshold of receiving contributions equalling 50 percent of total pledges and is now authorised to allocate resources for project implementation. Afghanistan has not yet received funds from the GCF as it is still relatively new; however, NEPA is currently establishing an interministerial board to facilitate development of proposals to the GCF.[15]

Considerable technical support and resources are also available to Afghanistan, including the Climate Technology Centre and Network (CTCN), hosted by UNEP, that aims to enhance the transfer of climate smart technologies in order to promote adaptive capacity and climate change mitigation efforts in developing countries. In Afghanistan, NEPA is the CTCN focal organization responsible for delivering requests for technical assistance on behalf of the country. Afghanistan's first CTCN Technical Assistance began in early 2015, at the request of NEPA, and focuses on capacity building and identifying technical needs and priorities in the three key sectors of agriculture, energy, and water. Similarly, Afghanistan is eligible to access support from the Climate Technology Initiative Private Financing Advisory Network (CTI PFAN), which aims to accelerate technology transfer and diffusion under the UNFCCC, reduce GHG emissions, promote low-carbon and sustainable economic development, and facilitate the transition to a low-carbon economy by increasing financing opportunities for clean energy projects. CTI PFAN is a multilateral public-private partnership that links investors, clean energy entrepreneurs, and project developers to promote clean and renewable energy projects.

15 Interview with Climate Change Division of the National Environmental Protection Agency (NEPA), Kabul, 10 July 2015.

3. MAINSTREAMING CLIMATE CHANGE INTO AFGHANISTAN'S GOVERNANCE FRAMEWORK

The many uncertain effects of climate change pose significant risks for sustainable development and require coordinated action across numerous sectors to ensure that development progress is not undermined. Afghanistan is already highly vulnerable to natural hazards, and a changing climate is likely to exacerbate their impacts unless measures are taken to increase the country's adaptive capacity. At present, Afghanistan's legislative frameworks and sectoral policies and strategies make little mention of climate change. However, in the long term, for climate change adaptation to be effective it must be supported by an integrated and crosscutting policy approach that mainstreams climate change into national development planning.

In recent years, Afghanistan has made considerable progress towards protecting its environment and is currently party to 13 MEAs, including the three Rio Conventions: the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (UNCDB), and the Convention to Combat Desertification (UNCCD). Afghanistan also ratified the Kyoto Protocol in 2013, which serves to implement the UNFCCC objective of reducing global GHG emissions into the atmosphere in order to stop dangerous anthropogenic interference with the climate.

In particular, the UNFCCC provides Afghanistan with a platform for the development of national climate change adaptation and mitigation strategies, as well as access to international funding and resources to address the country's climate change needs. All signatories to the UNFCCC are required to submit periodic National Communications that summarize their implementation of the convention.[16] Afghanistan submitted its **Initial National Communication (INC)** to the UNFCCC in 2012, and is currently preparing its **Second National Communication (SNC)**, whichaims to provide updated information on the country's steps towards the implementation of the convention. This includes a GHG inventory, the systematic collection and analysis of national climate data, development of national strategies for climate change adaptation and mitigation, as well as strengthening the **National Climate Change Committee (NCCC)** in its roles as the lead interministerial coordination mechanism on climate change.

The NCCC was itself established in order to facilitate multi-sectoral engagement in the preparation of the INC as well as provide overall policy guidance and advice, and build the country's institutional, scientific, technical, informational, and human capacity with respect to climate change for the sustainable implementation of the UNFCCC.[17] The NCCC is led by NEPA and is comprised of representatives from relevant government and academic institutions. Article 10 of the NCCC charter also specifies that the NCCC is meant to meet at least once every two months; however, prior to its reactivation through the SNC the NCCC was not meeting regularly. At present, the NCCC is resuming coordination meetings and reasserting its functions, but still needs considerable support and technical guidance in order to effectively mainstream climate change into the country's development policies, plans, and strategies.

16 Under the UNFCCC, the contents of National Communications are different for Annex I (developed) and non-Annex I (developing) countries, which is in accordance with the principle of common but differentiated responsibilities enshrined in the UNFCCC. National Communications from non-Annex I countries, such as Afghanistan, generally include sections on GHG inventories, identification of measures to mitigate and facilitate adequate adaptation to climate change, and any other information that the Party considers relevant to the achievement of the objective of the Convention. UNFCCC, National Reports, full text available (September 2015) at: http://unfccc.int/national_reports/items/1408.php
17 Afghanistan (2012a). Initial National Communication under the UNFCCC. Kabul : National Environmental Protection Agency.

In addition, in 2009, Afghanistan completed its **National Adaptation Programme of Action for Climate Change (NAPA)** in order to "identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change – those needs for which further delay could cause increased vulnerability or lead to increased costs at a later stage."[18] Afghanistan conducted its NAPA as a joint exercise with the National Capacity Needs Self-assessment for Global Environmental Management (NCSA), which is itself a mechanism for realizing a comprehensive assessment of a country's capacity, and capacity needs, for the fulfilment of the Rio Conventions.

The NAPA/NSCA process identified the country's most vulnerable areas to climate change: agriculture; biodiversity and ecosystems; energy; forests and rangelands; natural disasters; and water. It further identified Afghanistan's key priority areas for climate change: i) improved water management and use efficiency; and ii) community-based watershed management.[19] The NAPA/NCSA also identified Afghanistan's key challenges for addressing climate change, including a lack of expertise within relevant government institutions as a result of low levels of education, poor financing, and the fact that most government institutions are relatively nascent.

Building upon these commendable past achievements, NEPA is currently leading the development of a national **Climate Change Strategy and Action Plan for Afghanistan (ACCSAP**), with the following aims: i) integrate and mainstream climate change into the national development framework; ii) support the creation of a national framework for action on climate change adaptation; iii) identify low emission development strategies; iv) improve coordination and partnerships between government institutions, civil society, the international donor community, and the private sector; and v) increase availability and access to additional financial resources for effectively addressing climate change.[20] The ACCSAP also identifies policy initiatives to address climate change adaptation in the vulnerable sectors and areas of agriculture, food security, water, biodiversity, natural disasters, health, and infrastructure.

In addition, the ACCSAP includes a considerable emphasis on **Low Emission Development Strategies (LEDS**) and **Nationally Appropriate Mitigation Actions (NAMA)**, both of which have the strategic objective of reducing GHG emissions. More specifically, five NAMAs are proposed in the ACCSAP: i) support the development of policies and practices on energy efficiency; ii) implement policies and guidelines on sustainable urban development, including renewable energies and solid waste management and energy recovery; iii) enact policies and guidelines for sustainable urban transportation; iv) promote energy efficient cook stoves for rural communities; and v) regenerate forests and rangelands for environmental conservation and agriculture and food production.

The preparation of the INC, SNC, NAPA/NCSA, ACCSAP, and identification of NAMAs are all laudable steps towards deepening the integration and mainstreaming of climate change into national development policies and plans. Nevertheless, considering the diverse competing development challenges Afghanistan faces, substantial training, education, and outreach are still needed in order to raise awareness about the impacts of climate change in Afghanistan. Similarly, there remains a strong need to advocate for governance structures to integrate climate change into national development policies, plans, and strategies.

18 Global Environment Facility, Background Information on the NAPAs, available (September 2015) at: http://unfccc.int/adaptation/workstreams/national_adaptation_programmes_of_action/items/7572.php
19 Afghanistan (2009c). National Adaptation Programme of Action, p. 80.
20 Afghanistan (2015 - draft). Afghanistan Climate Change Strategy and Action Plan..

The following section provides a broad overview of the landscape of climate governance in Afghanistan, including the identification of achievements as well as entry points for further mainstreaming of climate change considerations in the national development framework. The primary focus is on the government institutions, legislative frameworks, sectoral policies and strategies, and interministerial coordination mechanisms relevant to Afghanistan's most vulnerable sectors as identified through the NAPA/NCSA and INC: i) agriculture; ii) biodiversity and ecosystems; iii) infrastructure and energy; iv) forestry and rangelands; v) natural disasters; and vi) water.

3.1. AGRICULTURE

3.1.1. Climate Impact Projections

Approximately 80 percent of Afghanistan's population relies on agriculture for its livelihood. Agricultural crops are highly dependent on specific climate conditions, and changes to the climate can have both positive and negative impacts on the ways that crops are cultivated. For example, an increase in atmospheric carbon dioxide, an essential ingredient that plants use to create their food through photosynthesis, could prove beneficial for some crops, assuming that the sufficient levels of nutrients, water, and soil moisture are maintained. Likewise, a warmer climate could increase the duration of the growing season and accelerate plant growth. But for many grain crops, faster growth may reduce the amount of time that seeds have to grow and mature, resulting in lower crop yields.

A warmer climate could also alter the range of pests and diseases, presenting additional challenges for crop species that previously would not have encountered such infestations or outbreaks. With a changing climate, rain-fed agriculture will be particularly vulnerable, possibly resulting in a widespread decrease in agricultural production and increase in need for irrigation. Unless agricultural producers implement suitable adaptation measures, such as using drought-resistant crop varieties and affordable micro irrigation technologies (AMIT) as proposed in ARD NPP#1, climate change projections suggest there is a strong risk that rural communities will see a decrease in agricultural productivity resulting in a decrease in income, coupled with an increase in food prices and market volatility.

Considering the agriculture sector's vulnerability to climate change, and its importance in Afghanistan, it is essential that climate change be effectively integrated into national agricultural programming. Nevertheless, key challenges impacting the integration of climate change into Afghanistan's plans, policies, strategies, and projects on agriculture and irrigation include the absence of a nationally approved climate change policy or strategy, low levels of awareness on the adverse impacts of climate change and available adaptation methods, and limited resources and competing priority development areas (security, health, education, etc.), among others.[21]

21 Afghanistan (2009c), p. 77.

3.1.2. Institutions

The Ministry of Agriculture, Irrigation, and Livestock (MAIL) is the primary government institution responsible for the agriculture sector and has the goal of restoring the country's licit agricultural economy through increasing agricultural production and productivity, as well as improving natural resource management, irrigation infrastructure, and market development. Thus, MAIL is responsible for the formulation of agricultural management and animal husbandry plans for Afghanistan, as well as implementation of the country's agricultural development plans.

MAIL is one of Afghanistan's largest ministries and is led by the Minister, who is supported by three Deputy Ministers (Technical, Irrigation and Natural Resource Management, and Administration and Finance) that oversee thematic directorates responsible for project implementation and the overall function of the ministry. MAIL's current structure is also the result of restructuring to bring the ministry in line with the National Agricultural Development Framework (NADF) and the NPPs within the ARD cluster, leading to the establishment of four key programme areas: i) natural resource management; ii) agriculture production and productivity; iii) economic regeneration; and iv) programme support and change management.

MAIL is especially relevant to climate change governance because of its focus on natural resource management, agricultural production, and irrigation water resource management at the national policy as well as local levels. More specifically, MAIL's General Directorate for Planning is well positioned to formally integrate climate change into existing policies and plans for agriculture and irrigation, such as the promotion of AMIT and water harvesting approaches. Likewise, the General Directorate of Natural Resource Management and Irrigation Directorate are ideal units for the direct implementation of climate change adaptation technologies through their projects at both national and local levels, particularly in the areas of community-based management and conservation of rangelands and forests.

3.1.3 Policies, Strategies, and Laws

Afghanistan's National Agricultural Development Framework (NADF) was established in 2009 as a roadmap for the country's agriculture sector, and includes four components: i) programme support and change management; ii) agriculture production and productivity; iii) economic regeneration; and iv) natural resource management. The NADF also specifies that these four components are the primary mandates of MAIL, which should be demand-driven by local consumers and the agricultural market, environmentally sustainable in order to minimize negative environmental impacts and enhance the natural resource base, and integrated through coordination at central, provincial, and district levels through area-based implementation of field activities.

The NADF does not make any mention of climate change, though it does emphasize the importance of environmental sustainability. Through this entry point, and building upon the strategies and recommendations in the ARD cluster NPPs, the NADF could be used for the piloting and promotion of drought-resistant crop varieties, AMIT, water harvesting measures, and integrated water resource management as key approaches to building

3.1.4 Interministerial Coordination Mechanisms

Within the agriculture sector, interministerial coordination is led by the **ARD Cluster**, which is chaired by MAIL and comprised of the ministries of rural rehabilitation and development (MRRD), energy and water (MEW), and counter narcotics (MoCN). The ARD engages in interministerial coordination at both policy and technical levels, and is comprised of 12 thematic working groups: i) cereals and industrial crops; ii) horticulture; iii) livestock; iv) irrigation; v) natural resource management; vi) pest management and quarantine; vii) data and information; viii) budget and finance; ix) capacity building; x) food security and nutrition; xi) agribusiness; and xii) women in agriculture.

The ARD cluster's overarching goal is "to build prosperous rural and pastoral communities."[22] Over recent decades, Afghanistan's agricultural production and productivity have declined, primarily as a result of conflict and recurrent droughts, and recent studies estimate that up to 70 percent of the population is food insecure.[23] Amidst the many challenges facing the country's agriculture sector, climate change has the potential to further destabilize food production unless concrete steps are taken to build the resilience of rural communities and improve farming practices.

The ARD cluster has already laid the foundation for integrating climate change into agricultural planning via its NPPs, but more progress needs to be made at the community level to actually implement approaches and strategies to build rural resilience to climate change. Thus, similar to the earlier discussion on the NADF, the ARD cluster should actively promote the piloting and implementation of innovative agricultural practices across its member institutions, including the use of drought-resistant crop varieties, AMIT, water harvesting measures, and integrated water resource management as key approaches to building community-based resilience and adaptive capacity to climate change.

Afghanistan (2010b), p. 7.
Afghanistan (2010b), p. 6.

3.2. BIODIVERSITY AND ECOSYSTEMS

3.2.1. Climate Impact Projections

Afghanistan's varied topography results in numerous habitat types, with temperature and precipitation changing considerably at different elevations. Species in these habitats are uniquely adapted to their ecosystems, ranging from desert to monsoon forest, and are therefore vulnerable to the impacts of climate change. According to Afghanistan's National Biodiversity Strategy and Action Plan (NBSAP), Afghanistan is home to more than 700 species of mammals, birds, reptiles, amphibians, fish, butterflies, and a staggering 3,500-4,000 native vascular plant species, though recent studies suggest that biodiversity loss is accelerating across the country.[24] Human activity, especially habitat fragmentation, is the primary cause of biodiversity loss, though climate change is expected to become the single largest global cause of biodiversity loss before the end of the century.[25]

In Afghanistan, climate change induced increases in temperature and decreases in availability of water resources will likely have considerable impacts on the country's ecosystems. Natural adaptation could be manifested shifting habitats or changing life cycles. Thus, both the UNCBD and UNFCCC consider the conservation and restoration of ecosystems to be essential to protecting biodiversity, supporting adaptation to climate change, and mitigating climate change.[26] Ecosystem-based adaptation, which integrates the use of biodiversity and ecosystem services into climate change adaptation, can provide a cost-effective approach that both maintains biodiversity and reduces negative impacts from climate change. Examples of ecosystem-based adaptation applicable in Afghanistan include: reduction of habitat loss and fragmentation, as well as habitat conservation through establishment of protected areas; afforestation to stabilize slopes, enhance soil integrity and regulate water flow; the promotion of agroforestry systems using diverse crops and plant species; and the sustainable management and restoration of watersheds linking upstream and downstream areas.

3.2.2. Institutions

The National Environmental Protection Agency (NEPA) was established by presidential decree in 2005 and is Afghanistan's foremost environmental regulatory, policy-making, coordinating, monitoring, and enforcing institution. NEPA's goal is to "protect the environmental integrity of Afghanistan and support sustainable development of its natural resources through the provision of effective environmental policies, regulatory frameworks, and management services that are also in line with the Afghanistan MDGs." [27]

Moreover, the Environment Law (2007) further clarifies NEPA's mandate, powers, responsibilities, and functions to include promotion of sustainable use of natural resources; conservation and rehabilitation of the environment; coordination of

24 Afghanistan (2014c). National Biodiversity Strategy and Action Plan. Kabul: National Environmental Protection Agency, p. 14.
25 Convention on Biological Diversity, Climate Change and Biodiversity, available (September 2015) at: https://www.cbd.int/climate/intro.shtml
26 Ibid.
27 Afghanistan (2009c). National Capacity Needs Self-assessment for Global Environmental Management (NCSA) and National Adaptation Programme of Action for Climate Change (NAPA). Kabul: United Nations Environment Programme, p. 30

environmental affairs in Afghanistan; development of national environmental policies, strategies, and legislation; regulation of activities that have an adverse impact on the environment through environmental impact assessment, air and water quality management, and pollution control; building public awareness and outreach about environmental matters; gathering and monitoring of environmental data; implementing the international environmental conventions to which Afghanistan is a party; and enforcement of the provisions of the Environment Law.[28] Within the scope of NEPA's mandate and institutional structure, there are a number of key divisions with regards to mainstreaming climate change into policy and practice:

- Climate Change Division
- Natural Heritage Division
- Environmental Planning Division
- Policy and Legislation Division
- International Relations Division
- Environmental Impact Assessment (EIA) and Sustainable Development Division

NEPA is at the forefront of Afghanistan's planning and programming on climate change and in recent years has made considerable progress towards building the country's adaptive capacity across all sectors. In particular, the Climate Change Division and Natural Heritage Division have been successful in raising awareness about the linkages between climate change and biodiversity, and taken constructive steps towards protecting the country's valuable ecosystems, through both policies and practical action, such as the declaration of nationally protected areas.

As Afghanistan's premier environmental institution, NEPA is well positioned to achieve the mainstreaming of climate change into national policies and development plans, especially in the areas of biodiversity and ecosystem conservation. NEPA's institutional capacity on climate change is also steadily increasing through the execution of a growing portfolio of larger climate change-related projects as well as constructive engagement with regional and international climate change partners and networks, such as the Asia Pacific Adaptation Network (APAN), Climate and Development Knowledge Network (CDKN), and CTCN, amongst others. In terms of the impacts of climate change on Afghanistan's natural heritage, NEPA is also well positioned to promote ecosystem-based adaptation as an overall approach that can be adopted by other government institutions and applied across numerous sectors in order to maintain biodiversity, reduce the negative impacts of climate change, and increase the resilience of rural communities.

In addition, the Ministry of Foreign Affairs also has an important role to play in protecting Afghanistan's biodiversity and ecosystems by ensuring that it fulfils obligations and commitments under MEAs to which it is signatory. This includes ensuring Afghanistan's active and meaningful participation at international negotiations and Conferences of Parties (COPs) for the UNCBD, UNFCCC, Convention on Migratory Species (CMS), the Cartagena Protocol, the Ramsar Convention, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Due to the interconnectedness of biodiversity, ecosystems, and climate change, each of these MEAs has a clear and logical climate change angle. By capitalizing on these natural linkages, Afghanistan could seize the opportunity to further advance its preparations for climate change and build its adaptive capacity through a focus on biodiversity and ecosystem conservation and restoration.

28 Ibid, p. 30.

3.2.3 Policies, Strategies, and Laws

Afghanistan's Environment Law came into force in 2005 and was passed by the National Assembly in 2007, replacing the earlier Nature Protection Act of 1986/2000.[29] The Environment Law establishes a regulatory framework for the sustainable use and management of Afghanistan's natural resources base, and provides for the conservation and rehabilitation of the environment towards achieving the country's social, economic, reconstruction, and ecological development goals.[30] NEPA led the development of the Environment Law and its processing through the relevant legislative sections within the Government for approval and ratification, while UNEP provided technical assistance and facilitated public consultations with national and international stakeholders.

The Environment Law does not explicitly mention climate change, but does cover areas of the environment that are impacted by and relevant to climate change, such as integrated pollution control (Chapter 4), water resource conservation and management (Chapter 5), and biodiversity and natural resource conservation and management (Chapter 6).[31] The Environment Law also defines a list of fundamental principles and the rights and duties of the state and persons (Chapter 1), as well as clear definitions of the functions and powers of NEPA and several interministerial environmental coordination mechanisms.[32] In addition, and in the absence of legislation on climate change, it is worth noting that Article 75 of the Environment Law states that "relevant line ministries and institutions, in cooperation with NEPA, shall take appropriate measures for the management of environmental issues in relevant sub-sectors, including forestry, rangelands, biodiversity, protected areas, national parks, public health and other sectors in accordance with relevant laws and regulations. If regulation is yet to be developed in the sub-sectors referred to in sub-article 1, the relevant line ministry shall incorporate environmental consideration into their legislation."[33]

The National Environment Strategy (NES) was developed in 2007 through the ANDS as a reflection of the environment as a crosscutting theme across all of Afghanistan's development priorities. The NES focuses on the two priority objectives of environmental governance and environmental management, and lays out thematic strategies for the following six areas: i) forestry and rangelands; ii) protected areas and biodiversity; iii) water and wetlands; iv) air quality; v) urban and industrial environmental management; and vi) environmental education and awareness. Although the NES does not make any mention of climate change, its overall focus is on the mainstreaming of environmental issues into national development priorities and plans in order to strengthen the management and governance of the country's environment and natural resources. Thus, the NES provides a valuable framework for the mainstreaming of climate change into national development priorities and plans, particularly through concrete recommendations for institutional strengthening and capacity building, as well as targeted thematic strategies that bring together the full spectrum of government institutions and stakeholders for the country's major environmental sectors.

The National Environmental Action Plan (NEAP) was drafted by NEPA and UNEP in 2009, as per the legal requirement of Article 9 of the Environment Law, and builds off the NES to identify specific actions to protect and address the country's environmental challenges. The NEAP focuses specifically on air, water, land, and biodiversity, but also strongly emphasizes the need for environmental considerations to be mainstreamed into national policies in

29 Ibid, p. 37.
30 UNEP (2007). A Guide to Afghanistan's 2007 Environment Law. Kabul: United Nations Environment Programme, p. 3.
31 Afghanistan (2007a), Environment Law.
32 Afghanistan (2007a), Environment Law, cc. 1 & 2.
33 Afghanistan (2007a), Environment Law, Art 75.

order to maximize environmental opportunities and minimize negative environmental impacts. Climate change is mentioned several times in the NEAP, particularly as a serious risk to biodiversity and the water sector, as well as the specific action to "undertake a study to determine the likely impacts of climate change on the agricultural and natural resource base of Afghanistan" framed within the discussion on the forestry and rangeland sector. [34]

Afghanistan's National Biodiversity Strategy and Action Plan (NBSAP) was developed in 2013 by NEPA with the goal of conserving all aspects of the country's biodiversity and ensuring that future utilization of biodiversity resources is sustainable.[35] The NBSAP also identifies the short-, medium-, and long-term actions and biodiversity goals for Afghanistan to successfully implement the UNCDB.[36] Within these actions and goals, the NBSAP identifies climate change as a serious risk to biological diversity in Afghanistan, particularly as a result of drought and desertification, but also notes "climate change has not been a consideration in the national or sectoral plans of the Government."[37] In 2015, NEPA began the process of revising and updating Afghanistan's NBSAP, which includes alignment with the 2020 Aichi Biodiversity Targets. Through this process there is a clear opportunity for the linkages between biodiversity and climate change to be articulated in an official government document, which would raise the profile of both biodiversity and climate change within national and sectoral development plans, as well as generate further momentum for ecosystem-based adaptation as an approach to reduce the impacts of climate change.

3.2.4. Interministerial Coordination Mechanisms

Through the Environment Law, Afghanistan has established several interministerial coordination mechanisms for the environment sector, all of which have the strong potential to support the mainstreaming of climate change into national development policies and plans across a wide range of stakeholders and partners. Although the NCCC is the country's lead coordinating mechanism on climate change it is vital that the full range of interministerial coordination mechanisms be engaged on the topic of climate change to ensure that it is sufficiently and effectively mainstreamed into all relevant sectors.

The Committee for Environmental Coordination (CEC) was established under Article 10 of the Environment Law in order to promote the coordination and integration of environmental issues and other fundamental principles of the Environment Law.[35] Members of the CEC are appointed by the President's Office, based upon recommendations from the Director-General of NEPA, and include representatives from all relevant line ministries, national institutions, provincial, district and village councils, and civil society organizations. The primary functions of the CEC, as defined in the Environment Law, include the mainstreaming of environmental issues into national development policies, assessing and providing recommendation on the delegation of functions of government institutions on environmental issues, and guiding the coordination of environmental activities across relevant stakeholders at the national and provincial levels.[40] Thus, the CEC is ideally positioned to guide the mainstreaming of climate change into national development policies across government institutions. Given its functions, the CEC should also support and complement the work of the NCCC to further promote climate change as an urgent national priority issue.

34 Afghanistan (2010c). National Environmental Action Plan. Kabul: National Environmental Protection Agency, p.23.
35 Afghanistan (2014c), p. 7.
36 Afghanistan (2014c), p. 7.
37 Afghanistan (2014c), p. 44.
38 Afghanistan (2007a), Art 10.
39 Afghanistan (2007a), Art 10.
40 Afghanistan (2007a), Art 10.

The National Environment Advisory Council (NEAC) was established under Article 11 of the Environment Law in order to advise NEPA on financial, regulatory, and environmental matters of national importance.[41] The composition of the NEAC is determined by the Director-General of NEPA, and may include governors, chairpersons of provincial, district, and village councils, Islamic scholars and tribal elders.[42] The NEAC is required to meet once a year, and held its inaugural meeting in May 2008.[43]

Subnational Environment Advisory Councils (SEACs) were established under Article 12 of the Environment Law in order to make recommendations regarding financial matters, including budgets and annual accounts, and environmental issues that are of local importance.[44] SEACs are required to meet at least every six months, under the chairpersonship of the Provincial Governor, and report to NEPA. The SEACs are composed of provincial chairpersons, district chairpersons, sub-governors, NEPA's provincial officers, civil society members, farmers, nomads, Islamic scholars, and tribal elders in each province.[45] Considering the breadth of SEAC membership, it is an ideal structure for raising awareness about climate change at the provincial level, and should take a more active role in promoting decentralized community-based natural resource management and ecosystem-based adaptation through provincial-, district-, and community-level institutions and civil society groups.

The Afghanistan Wildlife Executive Committee (AWEC) was established in 2008 by NEPA, MAIL, and Kabul University to assess the risk of Afghan species at the national scale using the International Union for the Conservation of Nature (IUCN) regional criteria. The AWEC also recommends to NEPA whether species should be legally listed as Harvestable or Protected, according to Article 47 of the Environment Law.[46] Afghanistan's protected species list includes 48 threatened or endangered species, and represents an important step towards protecting the country's natural heritage.

The Biodiversity Working Group (BWG) is comprised of senior representatives from NEPA, MAIL, and Kabul University and provides regular oversight and assessment of biodiversity management in Afghanistan. The BWG was initially formed through the NAPA/NCSA process, and later revived for the preparation and review of Afghanistan's Fourth National Report to the CBD.[47] In addition, the BWG provided technical guidance in the development of Afghanistan's NBSAP, including the development of Afghanistan's biodiversity targets and the identification of actions to protect the country's natural heritage. As NEPA proceeds with the review and update of the NBSAP, the BWG should provide vital guidance on the integration of climate change into the country's biodiversity strategies, plans, and goals.

41 Afghanistan (2007a), Art 11.
42 Afghanistan (2007a), Art 11.
43 NEPA & UNEP (2008b). Joint Press Release: National Environmental Advisory Council (NEAC) Islamic Republic of Afghanistan Inaugural Meeting. Available at: http://postconflict.unep.ch/download/press/2008-04_(30_April)_NEPA_UNEP_JOINT_Press_Releases_NEAC_inaugural_meeting_English.pdf
44 Afghanistan (2007a), Environment Law.
45 Afghanistan (2007a), Environment Law.
46 Afghanistan (2014c), p. 14.
47 Afghanistan (2009a). Fourth National Report to the UN Convention on Biological Diversity. Kabul: Ministry of Agriculture, Irrigation, and Livestock, p.31.

The Parliamentary Committee on the Environment (PCE) is a parliamentary sectoral committee that is responsible for considering legislation related to the environment, addressing environmental concerns, and environmental oversight, particularly in relation to the Environment Law.[48] The PCE is an active body that provides senior-level guidance and direction to the Government on environmental and natural resource management issues, and should therefore actively be involved in addressing the country's climate change needs and priorities.

The Protected Area Working Group (PAWG), formerly known as the Band-e Amir Coordination Committee, is an informal body established in 2006 that aims to facilitate coordination, policy, planning, and information sharing among government institutions, the donor community, NGOs, and the UN in the declaration and management of protected areas.[49] With the declaration of the Shah Foladi in Bamyan Province as the country's third nationally protected area in mid-2015, it is all the more important that the PAWG maintain momentum for ecosystem and biodiversity conservation in Afghanistan as a vital aspect of building resilience to climate change.

3.3. ENERGY AND INFRASTRUCTURE

3.3.1. Climate Impact Projections

As a result of more than three decades of near constant conflict, much of Afghanistan's infrastructure has been destroyed or severely degraded. Since 2001, the restoration and development of the country's physical capital has been a priority of international development agencies, but due to the heavy damage and massive investments required, progress has advanced at varying speeds. For example, the Afghanistan Reconstruction Trust Fund (ARTF) and Afghanistan Infrastructure Trust Fund (AITF) are both large-scale multi-donor initiatives that aim to rehabilitate the country's infrastructure, particularly roads and transportation, energy, water resource management, and provision of social services. These services are especially important in rural areas where the lack of necessary infrastructure has had negative impacts on economic development, market access, transportation, health, and education. Thus, it is imperative that climate change considerations are integrated into Afghanistan's rural development initiatives from the outset, to ensure that advancements made in recent years are not undone by extreme weather events or severe climatic shifts.

Urban areas and infrastructure are equally as vulnerable to the impacts of climate change, but have the added role of being prime contributors to climate change. Although cities cover less than two percent of Afghanistan's surface, they consume 70 percent of the country's energy and produce more than 50 percent of its carbon dioxide emissions, as well as significant amounts of other GHG emissions.[50] The main sources of these gases are energy generation, vehicles and transportation, the brick kiln industry, and biomass use.

48 Afghanistan (2009a), p. 31.
49 Afghanistan (2009a), p. 31.
50 Afghanistan (2012a); UN-Habitat (2015)

As a result of climate change, it is estimated that approximately 10 million urban residents across the country will be forced to contend with depleted aquifers and groundwater sources, erratic precipitation, floods, stronger and more frequent storms, and more extreme temperature fluctuations. In addition, most economic and social infrastructure, government facilities, and assets are located in cities, increasing the relevance of mainstreaming climate change into urban planning and development. Urban populations most likely to be affected by climate change are the poor – slum dwellers, refugees, and returnees – many of whom tend to live along river banks, on hillsides and slopes, near polluted grounds, on unregistered land, or in unstable structures.

Despite these risks, Afghanistan's urban planning has not yet addressed climate change. Cities lack appropriate policies and action plans, regulations on urban planning and the environment have not been adjusted to manage climate change, and the lack of capacity and resources results in slow response times to climate disasters. There is also a lack of public awareness on climate variability and the mitigation of climate change-induced hazards. If properly planned for and managed through the appropriate governance structures, cities can be places of climate innovation. Together with the local authorities, improved spatial and city planning has the potential to diminish the causes of climate change and effectively protect themselves from its impacts.

Afghanistan's energy sector has been particularly hard hit by decades of conflict and neglect. Currently, domestic energy production is at nearly the same level as it was just prior to the invasion of the Soviet Union in 1978, to say nothing of the condition of those energy producing facilities.[51] Afghanistan's abundant water resources mean that the country has considerable potential for hydropower development, which at present accounts for approximately 50 percent of domestic electricity installed capacity, with the remainder made up by thermoelectric and diesel generators.[52] Afghanistan also relies heavily on electricity imports from neighbouring countries, which account for more than three quarters of Afghanistan's total electricity usage.[53] In order to reduce reliance on imported electricity the Government has made it a national priority to promote domestic energy production, and quite reasonably Afghanistan's Energy Sector Strategy emphasizes the strong potential of domestic hydropower development in order to meet the country's energy needs and promote economic growth.[54] However, the uncertain impacts of climate change on the availability of water resources and increased risk of natural disasters, such as floods, raises questions about the safety and sustainability of hydropower dams. In addition, Afghanistan has considerable potential for renewable energies including solar, wind, and biomass, particularly if implemented in a decentralized manner for rural areas that do not have access to power grids. This has clear benefits for climate change mitigation and climate change adaptation, as well as sustainable development and poverty alleviation.

51 USAID, Afghanistan Energy Sector Overview, available (September 2015) at: http://www.sari-energy.org/PageFiles/Countries/Afghanistan_Energy_detail.asp
52 DABS (2013), Energy Sector Overview. Kabul: Da Afghanistan Breshna Sherkat. Available at: http://eneken.ieej.or.jp/data/5015.pdf
53 DABS (2013).
54 Afghanistan (2008b), Energy Sector Strategy. Available at http://moec.gov.af/Content/files/Energy%20Sector%20Strategy%20-%209%20June%2008%20-%20English.pdf

3.3.2. Institutions

The **Ministry of Rural Rehabilitation and Development (MRRD)** is the primary government agency leading the development of infrastructure and provision of basic services for rural communities, which it achieves via the delivery of the following six large-scale national projects that target rural access and transportation, rural water supply, rural economic development, and rural agricultural production**:**

- National Solidarity Programme (NSP)
- National Area-based Development Programme (NABDP)
- National Rural Access Programme (NRAP)
- Rural Water Supply, Sanitation, and Irrigation Programme (Ru-WatSIP)
- Afghanistan Rural Enterprise Development Programme (AREDP)
- Comprehensive Agriculture and Rural Development-Facility (CARD-F)

Through these projects MRRD is well positioned to achieve the mainstreaming of climate change into national policies and plans for rural development, and thereby reduce the risk of damage to vital infrastructure as a result of climate change-related extreme weather events. Moreover, MRRD's emphasis on community-based implementation presents valuable opportunities for building the resilience of rural communities by raising awareness about the impacts and risks of climate change as well as locally appropriate adaptation approaches.

The **Ministry of Energy and Water (MEW)** is the lead government agency responsible for the development of plans, policies, and laws for the energy sector, as well as the design and construction of infrastructure for energy generation and distribution. MEW's joint focus on water and energy is illustrative of its hydropower origins dating back to the construction of the Kajaki and Dahla dams on the Helmand Rivers in the 1950s. Within MEW's organizational structure, the most relevant divisions for the mainstreaming of climate change into the energy sector are the Energy Policy Directorate and Renewable Energy Directorate. Through these two directorates, MEW is well positioned to mainstream climate change into national energy planning, particularly in the area of renewable energy that is a central tenet of climate change mitigation. Renewable energy development also serves the dual purpose of increasing domestic energy production and diversifying energy sources, which ultimately strengthen the country's adaptive capacity and reduce the energy sector's vulnerability to the risks of climate change.

In addition, the **Ministry of Transportation (MoT)** is an important stakeholder in the mainstreaming of climate change into Afghanistan's infrastructure development plans, particularly as roads, bridges, railroads, airports, and other transportation infrastructure face considerable risks from the floods and extreme weather events that are expected to increase in frequency and severity with a changing climate. Likewise, climate change is also not expected to impact all parts of the country equally and urban residents will likely face some acute risks as a result of a warmer climate, such as heat waves and poor air quality.

48 Afghanistan (2009a), p. 31.
49 Afghanistan (2009a), p. 31.
50 Afghanistan (2012a); UN-Habitat (2015)

The **Ministry of Urban Development Affairs (MUDA)** is responsible for the provision of urban facilities across the country and should therefore be involved in the integration of climate considerations into urban planning in order to increase resilience of Afghanistan's cities and their populations. Also, in order to prevent unnecessary and costly damages to vital infrastructure, both MoT and MUDA should aim to integrate climate change into their current and future development plans, such as through climate proofing of infrastructure using ecosystem-based adaptation approaches. Moreover, transportation, construction, and urban areas are among the world's largest sources of GHG emission, which means that both MoT and MUDA have important roles to play in developing Afghanistan's nascent climate change mitigation efforts and low-emission development strategies (LEDS).

3.3.3 Policies, Strategies, and Laws

The **Energy Sector Strategy** was developed in 2008 as part of the ANDS Infrastructure pillar and provides a framework for the continued development of Afghanistan's energy sector, with strong emphases on economic growth and the electricity sector. The Energy Sector Strategy is based on five elements: i) increased efficiency in existing operation; ii) improving sectoral governance and promotion of public-private partnerships; iii) improving coordination and capacity development; iv) increasing availability of energy in rural areas; and v) expanding and establishing new supplies of energy.[55] Although numerous energy sources are included in the Energy Sector Strategy, there is a clear prioritization on electricity and the potential of hydroelectric power generation development to meet Afghanistan's energy needs and promote economic growth.[56] In addition, the Energy Sector Strategy recognizes that Afghanistan can learn lessons from other countries in the areas of energy efficiency, renewable energies, and decentralized energy systems, and thus includes analysis of the potential of renewable energies such as solar, wind, geothermal, and biomass energies. This is especially important in rural areas where decentralized energy generation is both more economical and locally appropriate than a centralized national grid system.[57]

The Energy Sector Strategy does not make any reference to climate change either as a risk to energy production or in the context of adaptation techniques and approaches to build the resilience of the energy sector. However in reference to renewable energies it mentions the environmental benefit of reducing carbon emissions, which are the cornerstone of climate change mitigation. Since the Energy Sector Strategy emphasizes the country's strong hydroelectric power potential, it should take into account the impacts of climate change, particularly as the NAPA identifies the water sector as one of the most vulnerable areas for the country. It should therefore mainstream climate considerations into all future energy development plans that rely on water resources. This should also be coupled with the further promotion of decentralized renewable energy options for rural communities, especially solar and biomass, in order to build the resilience and adaptive capacity of the country's population.

55 Afghanistan (2008b), Energy Sector Strategy. Available at: http://moec.gov.af/Content/files/Energy%20Sector%20Strategy%20-%209%20June%2008%20-%20English.pdf
56 Afghanistan (2008b).
57 Afghanistan (2008b).

The **Afghanistan National Renewable Energy Policy (ANREP)** is currently in its final draft, awaiting approval by the Cabinet, and was developed under the leadership of MEW. The goals of the ANREP are to increase the deployment of renewable energy technologies, reaching a target of 10 percent of the country's total energy by 2032, to promote private sector investment to enhance the competitiveness of renewable energies and nurture local industry, and to facilitate coordination between government bodies, NGOs, donors, and local communities for the growth and sustenance of the renewable energy sector, including through the establishment of the Interministerial Commission for Renewable Energy (ICRE). It is also charged with fostering international cooperation in the area of renewable energies.[58] The ANREP makes several mentions of climate change, particularly within the context of climate change mitigation by reducing GHG emissions through the promotion of alternative energies.[59] In addition, the ANREP also explicitly mentions the opportunities for Afghanistan to access global climate financial resources for the further expansion of renewable energies for low-carbon growth as part of climate change adaptation and mitigation.[60]

The **Rural Renewable Energy Policy (RREP)** was developed by MEW and MRRD in 2013 with the goal of increasing the deployment of renewable energies in rural areas in order to supplement national energy supplies and thereby enhance income generation, encourage economic development, and improve rural productivity. More specifically, the RREP aims to displace hydrocarbon and solid fuel usage for electricity, cooking, and heating purposes, alleviate the environmental and health impacts of electricity generation by unsustainable and inefficient biomass and fossil fuels, reduce GHG emissions, and encourage energy efficiency. Although Afghanistan's carbon emissions are relatively low, the RREP explicitly mentions the global climate change benefits of reducing GHG emissions and places particular emphasis on the benefits of hydropower, wind, solar, biomass/biogas, and geothermal energy sources for rural electrification, heating, and cooking.

3.3.4. Interministerial Coordination Mechanisms

The **Interministerial Commission for Energy (ICE)** was established by Presidential decree in 2006 as a coordination mechanism for the energy sector in Afghanistan, particularly in areas where formulation and implementation of policies and strategic investments require interministerial coordination. The ICE is chaired by the Minister of Economy and includes members from the major energy sector stakeholders, including the Minister of Energy and Water, Minister of Finance, and Minister of Mines and Petroleum as core members. Additionally, the Minister of Commerce, Minister of Foreign Affairs, Minister of Rural Rehabilitation and Development, and Minister of Urban Development Affairs are ad hoc members.[61] According to the Presidential Decree that established the ICE, its primary responsibilities are: i) the formulation and implementation of energy sector development (infrastructure) and policy reform; ii) preparation of national policy statements and Cabinet- and Presidential-level decisions with respect to the energy sector; iii) bilateral and multi-lateral donor support to the energy sector; and iv) external trade related to the energy sector. [62]

58 Afghanistan (2014a). Afghanistan National Renewable Energy Policy. Kabul: Ministry of Energy and Water, p. 4.
59 Afghanistan (2014a), p. 1.
60 Afghanistan (2014a), p. 14.
61 Afghanistan (2006), Presidential Decree on the Establishment of the Interministerial Commission for Energy.
62 Afghanistan (2006), Presidential Decree on the Establishment of the Interministerial Commission for Energy.

In addition, the ANREP proposes the establishment of an **Interministerial Commission for Renewable Energy (ICRE**), with its Secretariat housed within MEW, in order to expedite and oversee implementation of the ANREP. Proposed membership for the ICRE consists of MEW, MRRD, MoF, MoEc, and DABS are initial members, with further expansion depending on relevance and needs to include the donor community, MAIL, MoPH, MoCIT, MoWA, and NEPA, amongst others. If the ANREP is approved and the ICRE is established, they will become valuable mechanisms for coordinating and promoting the development of renewable energies. This would have clear benefits for ensuring that Afghanistan follows a low-emission development path, as well as diversify and expand domestic energy generation.

3.4. FORESTS AND RANGELANDS

3.4.1. Climate Impact Projections

The trees and plants that make up Afghanistan's forests and rangelands face a number of climate change risks and adaptation challenges as temperatures increase and availability of water resources decreases. Afghanistan's forests are already severely damaged as a result of deforestation, mismanagement, and drought, and today account for only approximately two percent of the country's total land cover. Likewise, Afghanistan's rangelands support a significant level of animal husbandry through sedentary, seasonal transhumance, and migratory systems, which is estimated to account for more than 50 percent of the country's total agricultural GDP. Unfortunately, overgrazing has resulted in heavy land degradation and conversion to rain-fed wheat production has resulted in extensive desertification and decreased productivity.[63] Afghanistan's rangelands are an especially valuable resource as they cover more than half of the country's total land and, in addition to supporting animal husbandry, provide vital food, fuel, building materials, medicinal plants, and habitat for wildlife, which collectively form the natural resource base that supports the vast majority of the country's population. [64]

With warmer temperatures, forest and rangeland plant species are expected to see a shift in their geographic range to more northern latitudes and higher altitudes thereby altering vegetation cover and increasing the risk of desertification, erosion, flooding, avalanches, and landslides. A warmer climate would also impact the biological diversity of plant species, as not all would be suited to a warmer climate. New pests, diseases, and invasive plant species better suited to a warmer climate could also increase competition with native species resulting in alterations to the ecosystem. Likewise, the increase in temperature and decrease in availability of water resources would likely increase the severity of droughts, and although many tree species are able to cope with limited droughts these changes could put many forest and rangeland plant species at risk, along with the people that depend upon them for their livelihoods.

63 Afghanistan (2009c), p. 23.
64 NEPA & UNEP (2008b). Afghanistan's Environment. Kabul: National Environment Protection Agency & United Nations Environment Programme

3.4.2 Institutions

The **Ministry of Agriculture, Irrigation, and Livestock (MAIL)** is the primary government institution responsible for the protection and sustainable management of Afghanistan's forests and rangelands, particularly as they relate to agroforestry and animal husbandry. Within MAIL, the General Directorate of Natural Resource Management is comprised of three sub-unit Directorates for rangelands, forestry, and protected areas, and is mandated with the management of Afghanistan's natural resources, with a particular focus on land use planning, biodiversity conservation, and the sustainability of forestry and rangeland resources.

In addition, the **National Environmental Protection Agency (NEPA)** and MAIL jointly play the valuable role of conserving Afghanistan's forests and rangelands through the declaration and management of nationally protected areas. Within NEPA, the Natural Heritage Division is responsible for the conservation and protection of the country's environment and biodiversity through the national protected areas system, which also encompasses the forests and rangelands located within protected areas.

Across these institutions, the sustainable management of forest and rangeland resources is essential to building the resilience of rural communities. Afghanistan's forests and rangelands are heavily degraded and will likely face considerable adaptation challenges in the face of a warmer and drier climate, as well as increased pressure from humans and livestock for access to these limited resources. In addition, the NAPA/NCSA identified that Afghanistan's rangelands and forests suffer from the "Tragedy of the Commons" where unclear ownership and use rights generate perverse incentives that stimulate unsustainable exploitation, leading to acceleration of the degradation of the resource and associated biodiversity. [65]

However, much like the agriculture sector, key challenges impacting the integration of climate change into Afghanistan's plans, policies, strategies, and projects for forests and rangelands include the absence of a nationally approved climate change policy or strategy, low levels of awareness of the adverse impacts of climate change or adaptation methods, and limited resources.[66] Competing priority development areas (security, health, education, etc.) are also an issue.

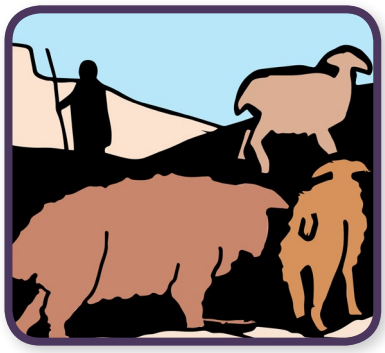
3.4.3 Policies, Strategies, and Laws

The **Forest Law** was approved by the Parliament in 2013 after long deliberation and numerous changes. It specifies the roles and responsibilities of government institutions for forestry management, focusing in particular on MAIL, Provincial Councils, and local *shuras*. According to the Law, MAIL is responsible for designing, implementing and providing guidelines on forestry management to provincial offices, coordinating forestry acts, and allocating funds to support the conservation and sustainable management of forests and forest resources in Afghanistan. Likewise, the Provincial Councils are responsible for the registration of Community Forestry Associations, as well as the monitoring of the activities of these Associations, while the shuras are responsible for resolving disputes over the use of forest resources and the demarcation of boundaries and land ownership.

65 Afghanistan (2009c), p. 40.
66 Afghanistan (2009c), p. 77.
67 A shura is a consultative body or assembly that has decision-making power. In Afghanistan's rural communities, shuras are typically comprised of traditional leaders respected by the community and charged with making decisions for the collective wellbeing of all in the community.

The Forest Law sets specific guidelines for forest and forest resource management (Articles 5, 6 & 22), conservation (Articles 7, 12 & 17), use (Articles 13, 15 & 20) and rehabilitation (Article 21) in protected and unprotected areas (Articles 10 and 11), but does not make any specific references to climate change. Nevertheless, the law does formally introduce the principles of community-based forest management into Afghanistan's regulatory and governance structures, which sets a valuable precedent for the decentralized management of natural resources as well as potential entry points for local communities to manage and utilize forest resources in order to bolster their adaptive capacity to climate change.

The **National Forestry Management Policy (NFMP)** was developed by MAIL in 2012. It aims for the sustainable management of Afghanistan's forest resources and advocates for the creation of community-based Forest User Groups that balance the needs for environmental protection with agricultural development.[68] Within Afghanistan's development planning the NFMP falls within the ARD cluster, specifically NPP#1: Natural Resource Management and Environmental Conservation, which makes explicit mention of the risks of climate change to both forests and rangelands, as well as identifies the urgent need for forest and rangeland restoration to increase the resilience of rural communities. The NFMP is underpinned by the concept of community-based natural resource management and promotes a holistic and integrated approach to environmental conservation and management, particularly in reference to ecosystem and watershed level approaches.



A **draft Rangeland Law** was developed in 2007 by MAIL to provide a framework for the administration, management, and use of rangelands and rangeland resources in Afghanistan. Although the Rangeland Law has yet to be approved, the draft includes detailed provisions for the administration of rangelands, including ownership and usufructuary rights, conflict resolution and rationalization of access rights of private, community, and public rangelands (Chapters 4, 5, and 6, respectively). The draft Rangeland Law does not make any mention of climate change, either in terms of risks to rangeland resources or adaptation techniques and approaches to build the resilience of rangelands. Nevertheless, the need to integrate climate change considerations into rangeland management is especially urgent as Afghanistan's rangelands are already severely degraded, becoming desertified and decreasing in productivity. In order to promote the sustainable use of the country's rangelands the Rangeland Law should place due emphasis on community-based management and the adaptive use of rangeland resources.

In addition to the Rangeland Law, MAIL developed a **Rangeland Management Policy** in 2012 in order to provide a framework and roadmap for the rehabilitation and protection of the country's rangelands to ensure that they are used in a productive, sustainable, and equitable manner by both sedentary and migratory populations.[69]

The **Land Management Law**, originally drafted in 2000 and subsequently revised in 2008 and 2012, aims to ensure the effective management of the country's lands and focuses primarily on land rights and ownership, and specifies MAIL as the primary institution responsible for management of land ownership affairs (Article 3). The Law does not make any specific mention of climate change, but does provide legal definitions for various categories

68 Afghanistan (2012c). National Forestry Management Policy. Kabul: Ministry of Agriculture, Irrigation, and Livestock.
69 Afghanistan (2012d). Rangeland Management Policy. Kabul: Ministry of Agriculture, Irrigation, and Livestock.

of land and their ownership rights (Article 2), such as privately owned agricultural lands and state owned lands. Moreover, this law specifies the definitions and management processes for various types of land, including rangelands and forests, which form the foundation for further laws and policies for the sustainable management of these natural resources.

3.4.4 Interministerial Coordination Mechanisms

At present, no interministerial coordination mechanisms for the forest and rangeland sectors are in place.

3.5 NATURAL DISASTERS

3.5.1 Climate Impact Projections

Afghanistan is highly prone to natural disasters, and over the last three decades nearly all of the country's 34 provinces have been affected by at least one natural disaster. [70] Under conditions of climate change, it is predicted that the incidence of extreme weather events, including heat waves, floods, and droughts, will increase. Similarly climate change-linked disasters such as glacial lake outburst floods risk becoming more common. Climate change projections also suggest that Afghanistan's vulnerability to natural disasters will be compounded by high population growth that will put increased stress on the natural environment and natural resource base. In particular, heat waves in urban areas will present health risks for vulnerable populations (children, elderly, sick, etc.), and in rural areas heat waves can increase stress on livestock putting them at risk of exhaustion, disease, and death. Additional health risks posed by climate change include worsened air quality, longer transmission seasons for infectious diseases, and altered geographic range of disease vectors. Also, decreased water availability can lead to increased water stress influencing dehydration, and indirectly, to malnutrition as agricultural productivity is hampered.

Although many natural disasters are unavoidable, building resilience and strengthening disaster preparedness can reduce their impacts on people and the environment. Ecosystem-based adaptation is one important approach to building this resilience by ensuring the natural environment can withstand the impacts of disasters. Watershed management and tree planting, for example, can reduce the risks of flooding and landslides in times of heavy rain and snowmelt. In addition, Early Warning Systems (EWS) are valuable tools for providing advance notice of an impending disaster, especially when managed by communities in rural areas where other forms of communication may be limited. However, for EWS to be effective they need to be accessible to local communities as well as take into account the distinct timeframes of quick onset disasters, such as flash floods, and protracted disasters, such as droughts.

70 Afghanistan (2009c).

3.5.2 Institutions

The **Afghanistan National Disaster Management Authority (ANDMA)** is the government mandated lead institution for the coordination and management of all aspects related to disaster and emergency response in Afghanistan, including coordination with other government institutions, NGOs, and aid organizations at the national, provincial, and district levels. ANDMA has a number of key responsibilities: i) promoting the development and implementation of national and provincial disaster management plans; ii) maintaining and operating a national disaster management information system (NDMIS); iii) coordinating disaster management with other government institutions at national, provincial, and district levels; iv) mobilization of immediate humanitarian assistance to communities affected by natural disasters; v) mobilizing rapid response forces to conduct assessments and providing support for provincial offices in times of disaster; vi) monitoring use of the National Emergency Fund; and vi) serving as the Secretariat to the High Commission of Disaster Management to ensure regular reporting and the implementation of its guidelines. [71]

ANDMA is led by the Director-General, who is supported at the senior management level by a Deputy Director-General and three Directors for policy and coordination, demining, and administration and finance. Within this structure, the most relevant Directorate for the mainstreaming of climate change into planning and response to natural disasters is the Policy and Coordination Directorate that coordinates response in the event of a disaster, promotes disaster risk reduction (DRR) as a national priority, and works towards streamlining the implementation of the Hyogo Framework for Action (HFA). [72]

Afghanistan's most recent National Progress Report on the Implementation of the HFA, submitted by ANDMA in February 2015, identifies several areas of synergy between disaster risk reduction and climate change adaptation:

- Establishment of budgetary allocation and dedicated funds on climate change adaptation and integration of DRR in sectoral development programs.
- Establishment of research, study, and pilot programs on DRR climate change adaptation at local levels for scaling up to the national level.
- Mainstreaming of DRR and climate change adaptation in sectoral plans (i.e., agriculture, livestock, water, energy, communication etc.).
- Scaling up of effective DRR and climate change adaptation approaches to all vulnerable areas in the country. [73]

These noteworthy linkages between DRR and climate change being advanced by ANDMA are a good example of successful mainstreaming of climate change into national plans and strategies for natural disasters. Nevertheless, momentum should be maintained to ensure that these actions are effectively implemented and that climate change is sufficiently integrated into the full breadth of DRR.

71 ANDMA, About ANDMA, available (September 2015) at: http://www.andma.gov.af
72 The HFA is a 10-year global plan to build resilience to natural disasters that was approved as an outcome of the 2005 Second World Conference on Disaster Reduction. The HFA runs from 2005-2015, and has five specific priorities: 1) making disaster risk reduction a priority; 2) improving risk information and early warning; 3) building a culture of safety and resilience; 4) reducing risks in key sectors; and 5) strengthening preparedness for response. For further details, see: http://www.unisdr.org/we/coordinate/hfa
73 Afghanistan (2015). National Progress Report on the Implementation of the Hyogo Framework for Action (2013-2015). Kabul: Afghanistan National Disaster Management Authority

In the area of climate EWS, the most relevant government institution is the **Afghanistan Meteorological Authority (AMA**), which was founded in the 1950s to collect, analyse, and disseminate climate and weather data, particularly for the agriculture sector. In 1956 AMA became a member of the World Meteorological Organisation (WMO), and in later decades under Soviet occupation AMA had some of the most advanced weather technologies available at the time. However, following the retreat of the Soviet Union and rise of the Taliban, AMA was dissolved and its offices and weather records were destroyed under the pretext that weather forecasting was sorcery and contrary to the tenets of Islam. In 2014, AMA was reinstituted as part of the Afghanistan Civil Aviation Authority due to the relevance of meteorological conditions to air travel. However, AMA has a broader mandate to collect and interpret weather and climate data, as well as provide weather reports and seasonal forecasts that can inform national planning in the areas of agriculture and disaster management, including drought and flood forecasting.[74] Thus, AMA is well positioned to function as the primary government agency for the collection, analysis, and dissemination of meteorological data and by extension, to the development of EWS.

Unfortunately, AMA has limited data gathering and reporting capacity, and relies on expert knowledge for creating weather forecasts rather than using scientific meteorological models.[75] Additional institutional challenges faced by AMA include a lack of resources, including functional weather and climate monitoring equipment, limited weather data collection stations, incomplete or missing electronic records and unreliable or non-existent internet access, low levels of capacity, limited coordination with other relevant government and international institutions, large data gaps from decades of war, and security concerns that limit access to remote areas of the country. [76]

Despite the numerous shortcomings in the availability of climatological and meteorological data in Afghanistan, there are some encouraging opportunities and entry points for climate change science. Consultations held with AMA senior management have revealed that some AMA staff have received training in climatological and meteorological topics, and are able to run meteorological models, but they do not have access to equipment or technologies to do so.[77] In addition, international partners such as the WMO have expressed interest in assisting AMA through the provision of technology and software for collecting, interpreting, modelling, and forecasting of climate and weather data. One such project, titled **Rehabilitation of the Afghan Meteorological Authority (RAMA)**, was designed to enhance the capacity of AMA to collect, process, interpret, and disseminate weather and climate information through the provision of a MESSIR data gathering and management system for Kabul International Airport.[78] However, as of early 2015, the RAMA project has yet to begin and the MESSIR system has not been provided or installed.

The **Ministry of Public Health (MoPH)** has an important role to play in the mainstreaming of climate change in Afghanistan, particularly as temperature and precipitation fluctuations can all impact air and water quality, food security, and increase the risk of natural disasters.[79] Medical and health facilities have been severely damaged as a result of decades of conflict. Still, the mainstreaming of climate change considerations into the health sector is necessary to better prepare medical experts and hospitals to respond to potential new risks and diseases, as well as to increase public awareness of the health risks posed by climate change and the measures Afghans can take to boost their health.

74 Interview with Mr. Allah Mohammad Faqiri, Montage Section Manager at the Afghanistan Meteorology Authority (AMA), Kabul, DATE
75 IC, Personal communication with Dr Noori, Director of the AMA [28 June 2011].
76 Interview with Mr. Allah Mohammad Faqiri, Montage Section Manager at the Afghanistan Meteorology Authority (AMA), Kabul, DATE
77 INSERT REFERENCE
78 WMO (2009), Request for Assistance under the WMO Voluntary Co-operation Programme (VCP), available (September 2015) at: https://www.wmo.int/pages/prog/dra/vcp/documents/AfghanistanTE631vre2009.pdf

3.5.3 Policies, Strategies, and laws

The **Law on Disaster Response, Management, and Preparedness** came into force in April 2012 with the aim of regulating preparedness activities for natural disasters.[80] The Law has several primary goals: i) prevention of probable disasters; ii) protection of ownership and securing public welfare and immunity in disaster situation; iii) prevention of land degradation and protection of area, vegetation and land cover; iv) preparation, integration, and coordination of disaster preparedness activities in all levels; v) community involvement in disaster management plans; vi) developing a functional mechanism to combat disaster; vii) protecting the health of women and affected people during the incidents and disasters; and viii) protection of women, children and disabled groups in disaster situations.[81] The Law does not make any mention of climate change, but concrete opportunities exist for the further mainstreaming of climate change into national- and local-level planning for natural disasters through ANDMA's continued implementation of the HFA and the integration of climate change into DRR initiatives.

The **Strategic National Action Plan for Disaster Risk Reduction (SNAP)** was published by ANDMA in 2011 with two goals: i) developing linkages between DRR strategies, climate change adaptation processes, and national development programmes; and ii) minimizing the impacts and losses of natural disasters and climate change through the implementation of national strategies guided by the HFA.[82] The SNAP outlines that these two goals will be achieved over the period 2011-2015 through six strategic objectives: i) capacity-building programmes targeting ANDMA and other relevant government agencies at the national and local levels; ii) establishing a national DRR data and communication network as well as a DRR research and evaluation programme; iii) strengthening of national EWS based on sound vulnerability and capacity assessments; iv) raising public awareness of DRR through an outreach and advocacy campaign; v) strengthening community resilience to reduce the risk of natural disasters and climate change; and vi) enhancing the Government's disaster preparedness capacity. The SNAP also identifies the key linkages between each of these DRR objectives and climate change adaptation, predominantly through a lens of building community resilience as an essential aspect of reducing the impacts and risks of natural disasters.

3.5.4 Interministerial Coordination Mechanisms

The **High Commission of Disaster Management (HCDM)**, formerly known as the National Commission for Emergency and Disaster Management (NCEDM), is defined in Chapter 2 of the Law on Disaster Response, Management, and Preparedness as the country's principal institution for the management of all disaster-related affairs, including coordinating response when disasters occur and guiding national policies to reduce vulnerability and risk of disaster. Article 7 of the Law defines the composition of the HCDM, with the Chief Executive as the head and the Director General of ANDMA as the Secretariat. Article 8 of the Law further defines the responsibilities of the HCDM: guiding disaster preparedness and management activities; approving disaster prevention and emergency relief operations; integrating disaster prevention projects into the national development programme and budget; declaring an emergency situation in the event of a disaster; and undertaking immediate measures to save lives and, if possible, eradicate the causes of disasters.

79 WHO, Climate Change and Human Health, available (September 2015) at: www.who.int/globalchange/en
80 Afghanistan (2012b). Law on Disaster Response, Management, and Preparedness. Kabul: Afghanistan National Disaster Management Authority.
81 Afghanistan (2012b). Law on Disaster Response, Management, and Preparedness. Kabul: Afghanistan National Disaster Management Authority.
82 Afghanistan (2011). Afghanistan Strategic National Action Plan (SNAP) for Disaster Risk Reduction: Towards Peace and Stable Development. Kabul: Afghanistan National Disaster Management Authority.

At the sub-national level, **Provincial Disaster Management and Response Committees (PDMCs)** have been established in all 34 of Afghanistan's provinces, which function as the link between national and provincial disaster management processes. Article 15 of the Law on Disaster Response, Management, and Preparedness designates the Provincial Governor as the head of the PDMC, with coordination and service delivery support provided by other government institutions at the provincial level.[83] Likewise, at the district level, **District Disaster Management and Response Committees (DDMCs)** are established under Article 16 of the Law on Disaster Response, Management, and Preparedness for planning and decision-making on disaster prevention and mitigation activities, with the District Administrator as the head of the DDMC, and with coordination and service delivery support provided by other representatives of government institutions and local communities present in the district.[84]

3.6 WATER

3.6.1 Climate Impact Projections

Afghanistan's NAPA/NCSA identified water as one of the most vulnerable sectors to the impacts of climate change. Although Afghanistan has abundant water resources, and a considerably higher amount of water per capita than neighbouring countries, the vast majority comes from winter snowfall at high altitudes. The Hindu Kush Mountains are the source of eight major rivers, while lower elevations see relatively little precipitation.

Current climate change projections developed show that precipitation levels will remain relatively stable up to 2100, but the overall increase in temperature across the country will lead to an increase in evaporation and evapotranspiration that will not be compensated by a sufficient increase in precipitation, thereby negatively impacting the water cycle and availability of water resources. Moreover, temperature increases will cause increased glacial melting in the Hindu Kush region, and a corresponding decline in groundwater recharge rates. These changes will occur in conjunction with a steady increase in population and demand for water. Warmer temperatures will also change seasonal precipitation patterns, likely causing earlier snow melt and causing more precipitation to fall as rain rather than snow. This will increase the risk of flooding during the spring and drought during the summer. These risks are further compounded by the heavy degradation of forests and rangelands, where vegetation formerly helped stabilize watersheds and attenuate runoff, while also limiting desertification and soil erosion.

83 Afghanistan (2012b). Law on Disaster Response, Management, and Preparedness. Kabul: Afghanistan National Disaster Management Authority.
84 Afghanistan (2012b). Law on Disaster Response, Management, and Preparedness. Kabul: Afghanistan National Disaster Management Authority.

3.6.2 Institutions

Responsibility for water resources management and use in Afghanistan is distributed between a number of government institutions depending on the sources and uses of water, which presents a number of valuable entry points for the mainstreaming of climate change into the governance structures that oversee the country's water sector.

According to the Water Law, the **Ministry of Energy and Water (MEW**) is the lead institution responsible for the overall planning, management, and development of the country's water resources. MEW has numerous responsibilities over water resources: the development of strategies and policies within the framework of the Water Law; the design and development of operational plans for water resources according to national priorities; the research, analysis, and evaluation of surface water resource data; forecasting of floods and droughts; the construction and maintenance of small and large hydropower stations; construction and supervision of structures for riverbank and irrigation canal protection; the establishment of River Basin Agencies and Water User Associations; and the issuing of Water Usage Licences.[85] Within the scope of these responsibilities, the most relevant units for the mainstreaming of climate change into the energy water sector are the Wa**ter Resource Management Directorate**, responsible for hydrological data collection and analysis, and the **Water Policy Design and Planning Directorate**, responsible for overall national water planning and coordination activities.

The Water Law also clearly defines the **Ministry of Agriculture, Irrigation, and Livestock (MAIL)** as the lead government agency responsible for water resources in the context of irrigation and agriculture. MAIL has a number of key responsibilities within the water sector: the construction, rehabilitation, and protection of irrigation networks; the equitable distribution of water within irrigation networks, in coordination with Water User Associations; the establishment of irrigation associations to participate in decision-making on water use and operation of irrigation networks; conducting research and promoting appropriate irrigation technologies to improve water quality and reduce water loss; water catchment restoration in order to mitigate flood risks and protect the environment; and overall safeguarding of irrigation networks for the effective provision of water for agricultural purposes. Within the scope of these responsibilities, MAIL's most relevant unit for the mainstreaming of climate change into the agricultural water sector is the **Irrigation Directorate**, which is well positioned for the promotion of AMIT and water harvesting activities as adaptation approaches, as well as policy inputs on climate-smart irrigation methods to increase water use efficiency.

Additional key government institutions identified in the Water Law as providing essential services to the water sector include: the **Ministry of Mines and Petroleum (MoMP)**, which is responsible for planning and implementing activities to survey, explore, investigate, research, and assess groundwater reserves; the **National Environmental Protection Agency (NEPA)**, which is responsible for monitoring of surface water and its protection from pollution; the **Ministry of Urban Development Affairs (MUDA**), which is responsible for the provision of drinking water and the construction of water treatment plants, water conveyance facilities, and sewage systems and treatment plants in urban areas; and the **Ministry of Rural Rehabilitation and Development (MRRD)**, which is responsible for the provision of drinking water and construction of small water infrastructure and sewage treatment systems in rural areas (See Section 4.3: Infrastructure and Energy for further details on MRRD's current work on water in rural areas).

85 Afghanistan (2009d). Water Law, Art 10.

3.6.3 Policies, Strategies, and Laws

Afghanistan's **Water Law** was revised in 2005 and came into force in April 2009 with the goal of protecting the country's water resources, ensuring the fair distribution of water, fulfilling the rights of water users, and safeguarding the sustainable and efficient use of water resources in the country. The law further enforces the principles of Article 9 of The Constitution for the purpose of conservation, equitable distribution, and the efficient and sustainable use of water resources. Article 2 of the Water Law states that water is owned by the public but the Government is responsible for its protection and management, with the responsibilities of government institutions differentiated according to the specific uses of water. Article 5 also states that water conservation is to be guided by a national water policy and strategy in accordance with the Water Law. The Water Law does not make any mention of climate change, but it does recognize the importance of community-based water management, the important principles of Islamic jurisprudence as well as the historical customs and traditions of community-based water resource management across the country.

The **Strategic Policy Framework for the Water Sector** entered into force in 2006 with the goal of developing and managing Afghanistan's water resources in a sustainable manner, through the active involvement of user organizations, institutions, and the private sector. [86] More specifically, the Strategic Policy Framework calls a number of key items: revision to the Water Law of 1991; regulations governing surface and ground water resources; regulations governing irrigation; charters and internal regulations for Water User Associations; a national water supply and sanitation policy; and a hydropower development policy.[87] Although the Strategic Policy Framework does not explicitly mention climate change, it is structured around the holistic concept of integrated water resource management, and emphasizes that adoption of a river basin approach in which natural boundaries of the landscape govern the management of water resources. This approach provides a valuable entry point for the further mainstreaming of climate change into the governance of water resources, through a landscape-based approach that integrates the regulatory role of government institutions with community-based management of water resources through Water User Associations across river basins in order to build local-level resilience and reduce vulnerability to fluctuations in the availability of water resources.

The **Water Sector Strategy** was developed in 2008 as part of the ANDS Infrastructure pillar and provides a framework for the development and management of Afghanistan's water sector. The Water Sector Strategy states its goals to be: i) better access to safe drinking water; ii) enhanced household food security; iii) protection from the negative effects of droughts and floods; iv) sustainable development and management of water resources; v) establish mechanisms for facilitating more effective user participation; vi) support to poverty reduction and private sector development; vii) effective services for efficient water use to facilitate economic growth and social development.[88] The Water Sector Strategy makes several references to climate change, particularly as a threat to the availability of water resources as well as the potential of hydropower to be developed as a low emission source of energy. Moreover, the Water Sector Strategy includes the drafting of new "policies to reduce vulnerability to climate change risks and mitigate against droughts and floods" as a crucial step for the implementation of the strategy and achievement of its goals.[89]

86 Afghanistan (2004b). Strategic Policy Framework for Water. Kabul: Ministry of Energy and Water.
87 Afghanistan (2004b). Strategic Policy Framework for Water. Kabul: Ministry of Energy and Water.
88 Afghanistan (2008c). Water Sector Strategy. Available at: http://moec.gov.af/Content/files/Water%20Sector%20Strategy%20-%20English.pdf
89 Afghanistan (2008c), p. 28.

A draft **Trans-boundary Water Policy** was developed in 2007 in order to promote cooperation and understanding in the management and use of internationally shared water resources.[90] This policy advocates that the management and use of trans-boundary water resources be regulated through government regulations and international agreements, with a recognition that trans-boundary water issues are likely to become more contentious as the population and by extension the overall demand for water increases. Afghanistan is the source of many of its neighbouring countries' water resources, including through the Kabul, Harirod, Panj-Amu Darya, Northern, and Helmand river basins; however, apart from the 1977 Helmand River Treaty between Afghanistan and Iran no other treaties or agreements on transboundary waters exist between Afghanistan and its neighbouring countries.

3.6.4 Interministerial Coordination Mechanisms

The **Supreme Council for Water Affairs Management (SCWAM)** was established in 2005 as the national coordinating body for water resources and is comprised of representatives from the key government institutions identified in the Water Law, namely MAIL, MEW, MoMP, MRRD and MUDA, as well as the Ministry of Public Health (MoPH), Ministry of Economy (MoE), and the Mayor of Kabul.[91] The SCWAM's mandate includes: coordinating water-related development and the activities of government institutions; recommending national water sector development plans and strategies for approval by the Cabinet; recommending newly drafted legislation and regulations for the water sector; monitoring the implementation of government development plans in the water sector; functioning as a dispute resolution body between government institutions for issues in the water sector; and ensuring that government institutions comply with the Water Law.[91] Given the scope and power of this mandate, the SCWAM is a key partner for the mainstreaming of climate change considerations into national policies and plans for the water sector, particularly in order to improve water management and use efficiency in order to build the resilience of the water sector and Afghanistan's adaptive capacity. [93]

Afghanistan's Water Law grants MEW with the authority to establish **River Basin Councils** and **Sub-basin Council**s consisting of representatives of water users, relevant central and local departments of line ministries, and other relevant stakeholders.[94] In accordance with the Strategic Policy Framework for the Water Sector, and within the geographic scope of their respective river basins and sub-basins, these councils have a diverse array of functions and mandates: preparing and developing water resource management strategies; determining water allocations; managing and monitoring water rights; assessing, issuing, modifying, and cancelling water permits; resolving disputes arising from the distribution and use of water; collecting and analysing statistical and hydrological data; and ensuring compliance with the Water Law. In addition, River Basin Councils have the additional responsibility of overseeing the formation and function of Sub-basin Councils.

The Water Law also grants MEW the authority to establish **Water User Associations** in order to increase stakeholder engagement at local levels. These Water User Associations also take into account the customary water management systems that are operated by mirab bashi (water masters) and mirab (water master assistants), which ensures synergy with community-based natural resource management in order to bolster rural resilience. In addition to MEW, MAIL is also mandated by the Water Law to assist with the formation and capacity building of these Water User Associations.

91 Afghanistan (2008c). Water Sector Strategy. Available at: http://moec.gov.af/Content/files/Water%20Sector%20Strategy%20-%20English.pdf
92 Afghanistan (2008c). Water Sector Strategy. Available at: http://moec.gov.af/Content/files/Water%20Sector%20Strategy%20-%20English.pdf
93 Afghanistan (2009c)
94 Afghanistan (2009d)

4. RECOMMENDATIONS

The following recommendations are intended primarily for the Government of the Islamic Republic of Afghanistan in order to ensure that climate change is effectively mainstreamed into the country's development framework and processes. However, in recognition of the broad stakeholder participation needed for good governance, recommendations are also provided for NGOs, civil society, academia, and the international development community to strengthen their contributions and support to Afghanistan in addressing climate change. These recommendations are the result of detailed analysis of Afghanistan's most vulnerable areas to the impacts of climate change, and are arranged according to urgency (short-, medium-, and long-term).

To strengthen Afghanistan's overall governance of climate change:	
Short-term	Afghanistan's Climate Change Strategy and Action Plan (ACCSAP) should be urgently finalized and implemented as a primary step towards mainstreaming climate change into national development plans.
	Civil society and NGOs, particularly involving women and youth, should be involved in awareness-raising events and capacity-building activities to generate greater public awareness of climate change and foster greater political will to address Afghanistan's urgent climate change needs.
Medium-term	Comprehensive capacity-building programmes should be implemented at the national, provincial, and local levels in order to raise awareness and support the mainstreaming of climate change within all levels of the country's governance processes.
Long-term	NEPA should be included as a core member of interministerial coordination mechanisms, especially water and energy, in order to promote more active leadership on climate change and it's mainstreaming across all relevant sectors and vulnerable areas.
To strengthen climate science and projections in Afghanistan:	
Short-term	Accurate and sound scientific analysis of climate change impacts and adaptation measures should be brought to the attention of policy-makers to encourage further mainstreaming of climate considerations into sectoral planning and reduce the adverse impacts of climate change on the country's population.
Medium-term	Afghanistan's Central Statistics Organization (CSO) should include climate change indicators in vulnerability reduction assessments in order to increase the body of scientific and climate related data available to influence national development planning.
	Climate change should be integrated into higher education curricula to promote further mainstreaming across relevant disciplines as well as build national capacity to understand and apply climate change adaptation and mitigation approaches.

Long-term	Researchers, academics, and scientists should collaborate to continue advancing climate projections and scenarios for Afghanistan in order to give an increasingly clear picture of what the country's future climate will look like.
To increase availability and access to global climate finance and resources:	
Short-term	The technology needs for both adaptation and mitigation should be identified for each sector and vulnerable area. Current efforts, which include CTCN, should be expanded and prioritized in the national development agenda.
Medium-term	Public-private partnerships should be promoted to increase availability of funds and resources for climate-friendly technologies, particularly in the areas of decentralized energy and rural electrification.
Long-term	Afghanistan should establish an accredited national implementing agency in order to access multilateral financial resources. Gaining accreditation and managing the finances provided will require reliable systems within the Ministry of Finance (MoF) to administer these special accounts in cooperation with the Ministry of Foreign Affairs (MoFA).
To increase the resilience of the agriculture sector:	
Short-term	MAIL and NEPA should launch a work programme to improve assessment of climate change impacts on agricultural productivity as well as build institutional capacity to better support adaptation in the agriculture sector.
	MAIL and NEPA should launch a work programme of scientific research and piloting of drought-resistant crop varieties and AMIT in order to build a body of knowledge and institutional capacity to better address a warmer and drier future climate.
Medium-term	MAIL and NEPA should establish a comprehensive training programme for provincial staff and extension workers on climate change impacts on agricultural productivity, with a considerable focus on ecosystem-based adaptation via drought-resistant crop varieties and AMIT.
Long-term	The National Agricultural Development Framework (NADF) should be revised to include considerations of climate change on agricultural productivity and promote early action adaptation among rural communities, such as the use of drought-resistant crop varieties, water harvesting techniques, and AMIT.
To increase resilience of biodiversity and ecosystems:	
Short-term	The climate considerations included in the National Environmental Action Plan (NEAP) should be more strongly promoted in order to further mainstream climate change into sectoral planning.
	Awareness-raising events and capacity-building activities on ecosystem-based adaptation and environmental conservation should be urgently implemented in order to raise public and government awareness on immediate steps to be taken to build adaptive capacity to climate change.

Short-term	Knowledge on climate change and capacity to implement climate change adaptation and mitigation plans should be built within environmental interministerial coordination mechanisms, such as the Committee for Environmental Coordination (CEC), the National Environment Advisory Council (NEAC), Subnational Environmental Advisory Councils (SEACs), Parliamentary Committee on the Environment, the Afghanistan Wildlife Executive Committee (AWEC), Biodiversity Working Group (BWG), and Protected Area Working Group (PAWG), amongst others.
Medium-term	Climate change should be more strongly reflected in national biodiversity and ecosystem conservation plans and efforts, including in the National Biodiversity Strategy and Action Plan (NBSAP), and national reports under the Convention for Biological Diversity (CBD).
	Research projects should be funded to study the impacts of climate change on Afghanistan's biodiversity loss and promote ecosystem-based adaptation to reduce the negative impacts of climate change.
	Afghanistan should design and implement climate change adaptation strategies for wetland conservation and migratory species threatened by the impacts of climate change.
Long-term	Afghanistan should expand its protected areas to provide increased habitat protection for the country's species.
	Afghanistan should establish a biodiversity and gene bank for conserving vital genetic resources from the country's 3,500-4,000 native vascular plant species.
To reduce climate induced impacts on infrastructure and energy:	
Short-term	Infrastructure projects should integrate climate-proofing (preferably with ecosystem-based adaptation) in order to better protect roads, bridges, water supply, electricity, and other infrastructure from extreme weather events and ensure that advancements made in recent years are not undone.
	In rural areas that do not have access to power grids, decentralized, low emission, and climate-friendly energy projects should be prioritized in order to provide accessible energy to rural populations and stimulate rural economic growth.
Medium-term	The Afghanistan National Energy Policy (ANREP) and Rural Renewable Energy Policy (RREP) should be aligned with Afghanistan's Climate Change Strategy and Action Plan (ACCSAP) to ensure that climate change mitigation actions are effectively integrated and addresses.
	Municipalities and urban planners should take climate change into account in order to reduce risk of natural disaster and promotion of more sustainable construction and transportation practices.
	Due to the importance of the energy sector as a source of most of Afghanistan's greenhouse gas emissions, NEPA should be included as a core member of the Interministerial Coordination Mechanism on Energy (ICE) and lead a working group on climate change and renewable energies.

Long-term	The Energy Sector Strategy should be revised to expand its coverage of climate change to include clear and achievable targets for low-emission development strategies (LEDS), as well as integrate climate change adaptation into future energy development projects.
To increase the resilience of forests and rangelands:	
Short-term	The Rangeland Law should be urgently approved, and the Rangeland Management Policy should be revised to include detailed guidance for the integration of climate change risks and adaptation techniques into rangeland management.
	As per the recommendation of the National Environmental Action Plan (NEAP), research projects should be undertaken to study the impacts of climate change on forests and rangelands, and provide a roadmap for increasing adaptation for and improving management of these valuable natural resources.
Medium-term	A comprehensive survey of forest and rangeland species (flora and fauna) should be conducted in order to identify which species are most threatened by and resilient to climate change, and subsequently integrate these findings into national forestry and rangeland management policies.
Long-term	The Forest Law should be revised to include specific references to climate change, including identification of climate risks to the forestry sector and suitable adaptation techniques to be employed, as well as the potential of the forestry sector to play a greater role in the country's climate change mitigation efforts.
To increase resilience to natural disasters and climate-related health risks:	
Short-term	The National Environmental Advisory Council (NEAC) should meet regularly to provide guidance and inform government institutions on climate change and other hazards impacting the country.
Medium-term	NEPA and ANDMA should collaborate more closely to ensure that national plans for DRR and EWS take into account specific climate risks, based on scientific analysis and climate projections for all parts of the country.
	NEPA and the MoPH should collaborate on a study to investigate the potential health risks of climate change and subsequently develop an action plan to ensure that health institutions are prepared for emerging health risks and identify steps to reduce health risks for urban and rural populations.
Long-term	The Law on Disaster Response, Management, and Preparedness should be revised to include climate change within planning and prevention of natural disasters, and to provide further entry points for building synergies between DRR and climate change adaptation initiatives.

To increase resilience in the water sector:	
Short-term	In rural areas, community-based water harvesting, water conservation, and watershed management techniques and practices should be promoted in order to improve management of existing water resources and decrease vulnerability to droughts.
Medium-term	The Strategic Policy Framework for the Water Sector should be revised to include climate change as a priority for the effective management of water resources, particularly within its holistic approaches to river basin scale integrated water resource management.
	Due to the importance to the water sector as part of climate change adaptation, NEPA should be included as a core member of the Supreme Council for Water Affairs Management (SCWAM) in order to promote more active leadership on issues related to climate change and water resources.
Long-term	MEW should increase the number of hydrological monitoring stations around the country to better collect regular data on water resource availability as well as develop more accurate projections for future water needs and availability.

ANNEX 1: OVERVIEW OF CLIMATE RELEVANT NATIONAL PROJECTS

Project Name: Afghanistan Rural Enterprise Development Programme (AREDP)

Lead Implementer(s): MRRD

Relevant Focus Area(s): Infrastructure, energy

AREDP was launched in 2009 with the goal of increasing employment and income earning opportunities for rural communities, which is achieved through the provision of knowledge-based and financial services to community-based rural enterprises, and the provision of business advisory and financial services to rural small- and medium-sized enterprises.

Project Name: Agromet

Lead Implementer: MAIL

Relevant Focus Area(s): Agriculture, natural disasters

The Agromet project was established as a collaborative effort between MAIL and the United States Geological Survey (USGS) to generate and disseminate climatic data and information relevant to agricultural production. AgroMet's objectives include assisting the government in the collection and analysis of meteorological and agricultural data relevant to crop production, irrigation, water supply, and energy, as well as building national capacity on agro- and hydro-meteorology, statistical monitoring and assessment of droughts and floods, and the dissemination of meteorological data for the agriculture sector. The Agromet project has installed more than 100 observation stations, established an agro-meteorological database, trained approximately 200 staff on agro-meteorology methods and tools, and realized preliminary modelling of crop yields, focusing mostly on wheat. Despite these achievements, the USGS ended its involvement in the Agromet project in June 2014 due to a lack of resources, and fully handed the project over to MAIL. The Agromet project continues to operate, but its integration into MAIL's organizational structure has faced considerable challenges and there is a need for further support and guidance to be provided for the sustainable continuation of the project.

Project Name: Building Adaptive Capacity and Resilience to Climate Change in Afghanistan (LDCF-1)

Lead Implementer(s):

Relevant Focus Area(s): Climate change

In 2013, Afghanistan launched its first full-size GEF climate change adaptation project, which is administered by the GEF's LDCF and aims to build the country's adaptive capacity and resilience to climate change. This four-year project is being executed by NEPA, with technical support provided by UNEP, in order to reduce the vulnerability of Afghanistan's rural communities and economy to current and future climate variability and risks, through four main pathways: i) strengthening Government capacity on climate change monitoring and forecasting; ii) mainstreaming climate change adaptation into policies and planning; iii) promoting ecosystem management as an approach to climate change adaptation; and iv) increasing knowledge and awareness of climate change adaptation and best practices at the national, provincial, and community levels.

This project also marks the first time that Afghanistan has accessed financial resources from the LDCF for a full-size climate change project, and has opened the door for Afghanistan to access a previously untapped source of global financial resources from the GEF for addressing the country's urgent climate change needs. Since the award of the LDCF-1 project, the GEF LDCF has granted Afghanistan further resources for two additional full-size climate change adaptation projects: LDCF-2 (being executed by MAIL and UNDP) and LDCF-3 (being executed by NEPA and UNEP). The provision of these additional resources also presents valuable opportunities for building political will and momentum for decision-makers to address Afghanistan's urgent climate change needs, mainstream climate considerations into national policies and development planning, and expand and upscale climate change adaptation and mitigation efforts across the country.

Project Name: Building the Resilience of Communities Living Around the Northern Pistachio Belt and Eastern Forest Complex of Afghanistan through and Ecosystem-based Adaptation Approach (LDCF-3)

Lead Implementer(s): NEPA

Relevant Focus Area(s): Forests, ecosystems, climate change

In early 2015, Afghanistan was granted it third full-size GEF climate change adaption project by the GEF LDCF with certain goals: i) to strengthen the capacity of national and local Government and other stakeholders to address climate change risks by improving watershed functioning; ii) to improve community-based watershed management through the restoration of degraded forest ecosystems; and iii) to scale up and increase knowledge of the role of ecosystem-based adaptation in improving watershed functioning and building climate resilience. As of mid-2015, the LDCF-3 project is in final stages of project implementation design, and is slated for launch in early 2016. As with the LDCF-1 project, the LDCF-3 project is being developed and executed by NEPA, with technical support provided by UNEP.

Project Name: Climate Technology Centre and Network (CTCN)

Lead Implementer(s): NEPA

Relevant Focus Area(s): Climate change

The CTCN is a global initiative hosted by UNEP that aims to enhance the development and transfer of climate smart technologies in order to promote adaptive capacity and climate change mitigation efforts in developing countries. In Afghanistan, NEPA is the CTCN focal organization and delivers requests for technical assistance to CTCN on behalf of Afghanistan. Afghanistan's first CTCN Technical Assistance began in early 2015, at the request of NEPA, and focuses on capacity building and identifying technical needs and priorities in the three key sectors of agriculture, energy, and water.

Project Name: Comprehensive Agriculture and Rural Development-Facility (CARD-F)

Lead Implementer(s): MAIL, MRRD, MCN, MoF

Relevant Focus Area(s): Agriculture

CARD-F is a joint entity established in 2009 under the ARD cluster ministries and administered under an interministerial committee that consists of MAIL, the Ministry of Rural Rehabilitation and Development (MRRD), the Ministry of Counter Narcotics (MCN), and the Ministry of Finance (MoF). CARD-F aims to facilitate growth in legal rural income and employment by strengthening licit agricultural markets and minimizing adverse incentives to revert to opium production by supporting commercially viable agricultural value chains (poultry, dairy, cotton, honey, grapes and vegetable) as well as improvements in rural infrastructure (irrigation, rural access roads, and food storage facilities). Although CARD-F does not place strong emphasis on climate change, it is nevertheless a serious consideration that should be integrated with its approach for the long-term sustainability and resilience of rural livelihoods and the agriculture sector.

Project Name: Developing Core Capacity for Decentralized MEA Implementation and Natural Resource Management in Afghanistan (MEA CCCD)

Lead Implementer(s): NEPA

Relevant Focus Area(s): Biodiversity, ecosystems, climate change, MEAs

In October 2014, NEPA and UNEP initiated this three-year project to strengthen Afghanistan's capacity to fulfil the obligations of MEAs to which it is a party, especially the three Rio Conventions (UNFCCC, UNCDB, and UNCCD). More specifically, this project aims to accomplish the following: i) improve interministerial coordination of MEA objectives; ii) build stakeholder participation in MEA implementation; iii) support institutions to translate MEA commitments into practice; and iv) strengthen national financial and execution mechanisms for the Rio Conventions. By bringing together a wide range of stakeholders to improve Afghanistan's implementation of MEAs, this project presents valuable opportunities to further mainstream climate change into national planning and interministerial coordination mechanisms across a wide breadth of sectors in order to better address the country's priority issues on climate change.

Project Name: FEWS NET

Lead Implementer: MAIL

Relevant Focus Area(s): Agriculture, natural disasters

FEWS NET is a global initiative funded by USAID and administered by Chemonics that aims to deliver early warnings of hazards, food insecurity, vulnerability to food insecurity, and famine. In Afghanistan, FEWS NET is embedded within MAIL in order to generate, analyse, and share critical data to monitor rising or waning food insecurity situations, including harvests, food prices, market factors, population movements, and climate and weather data in order to help decision-makers deploy resources in advance of famine.

Project Name: Initial National Communication (INC) and Second National Communication (SNC)

Lead Implementer(s): NEPA

Relevant Focus Area(s): Climate change

All countries signatory to the UNFCCC are required to submit periodic National Communications that summarize their implementation of the convention. Afghanistan signed the UNFCCC in 1992 and ratified the Convention in 2002. Afghanistan is categorized as a non-Annex I Party to the Convention, meaning that it was required to submit its first National Communication within three years of entering the Convention, and required to submit updated National Communications every four years thereafter. Moreover, as a non-Annex I country, Afghanistan's National Communications are required to include, at minimum, the following sections: information on GHG inventories, measures to mitigate and to facilitate adequate adaptation to climate change, and any other information that the Party considers relevant to the achievement of the objective of the Convention.

In 2008, NEPA and UNEP jointly implemented the four-year project "Enabling Activities for the Preparation of the Islamic Republic of Afghanistan's Initial National Communication (INC) under the UNFCCC," which culminated in the formal submission of Afghanistan's INC in 2012. In preparation for the INC report, NEPA and UNEP created six National Study Teams to lead research, and established a National Climate Change Committee (NCCC) to provide policy guidelines and lead interministerial coordination on climate change.

In January 2015, Afghanistan began the two-year preparation of its Second National Communication (SNC), which builds upon the outcomes and successes of the INC, and is being led by NEPA with technical assistance provided by UNEP. The SNC aims to strengthen the information base and technical and institutional capacities in Afghanistan, integrate climate change priorities into development strategies and relevant sector programmes, increase the awareness of climate change amongst the citizens of Afghanistan, as well as increase information exchange and cooperation between all stakeholders including government officials, civil society, non-governmental organisations, academia and the private sector. The key outputs of the SNC will include: i) an updated national GHG inventory; ii) a strategy containing measures to adapt to climate change; and iii) a strategy containing measures to mitigate climate change

Project Name: National Adaptation Programmes of Action for Climate Change (NAPA) and National Capacity Needs Self-assessment for Global Environmental Management (NCSA)

Lead Implementer(s): NEPA

Relevant Focus Area(s): Biodiversity and ecosystems, climate change

Afghanistan completed its NAPA/NCSA in 2009 as a joint process led by NEPA and UNEP. The purpose of the NAPA/NCSA process is to identify Afghanistan's priority capacity needs for the implementation of the Rio Conventions (UNFCCC, UNCBD, and UNCCD) and the identification of key activities to mitigate the negative impacts of climate change in the country. The specific objectives of the NAPA include: identification of priority projects and activities to assist local communities adapt to climate change; integration of climate change considerations into national planning processes; and building synergies with existing MEAs and development activities that emphasize climate change adaptation and mitigation.

In preparation of the NAPA/NCSA, working groups comprised of technical experts from governmental and non-governmental institutions analysed the situation of climate change, biodiversity, and desertification in Afghanistan. These working groups identified a total of 51 potential activity options across seven sectors (water, agriculture, forestry and rangelands, biodiversity, health, energy, and waste) for climate change adaptation, of which the following 11 were prioritized for immediate implementation: improved water management and use efficiency; land and water management at watershed level; development of horticulture; improved terracing, agro-forestry and agro-silvo pastoral systems; agriculture research; rangeland management; development of disaster management strategy; improved food security; improved livestock production; creation of off-farm employment; and climate-related research and early warning system. As the first comprehensive report on climate change in Afghanistan, the information in the NAPA/NCSA has thus informed further climate change programming in the country and facilitated Afghanistan's access to global climate financial resources, particularly from the GEF.

Project Name: National Area-based Development Programme (NABDP)

Lead Implementer(s): MRRD

Relevant Focus Area(s): infrastructure and energy

NABDP was established in 2002 as a joint initiative by MRRD and UNDP with the goal of contributing to a sustainable reduction of poverty and an improvement of livelihoods in rural Afghanistan. NABDP is based on the Social and Economic Development pillar of the ANDS and is aligned with the NPPs in the ARD cluster. In terms of rural development, NABDP's scope covers a number of community-based activities: the construction of roads and bridges; provision of rural electricity systems; construction of culverts; retaining walls and gabions in flood-prone areas; provision of clean drinking water facilities; construction of agriculture and irrigation infrastructure; construction of community and government buildings; economic empowerment and cottage industry initiatives for rural women; and the provision of temporary labour for rural income generation.

Project Name: National Biodiversity Strategy and Action Plan (NBSAP)

Lead Implementer(s): NEPA

Relevant Focus Area(s): Biodiversity and ecosystems

All parties to the UNCBD, which Afghanistan signed in 1992 and formally acceded to in 2002, are urged to develop an NBSAP as a framework for implementing the Convention's goals. Afghanistan's NBSAP was developed in 2013 by NEPA, with technical support provided by UNEP, with the goal of conserving all aspects of the country's biodiversity and ensure that future utilization of biodiversity resources is sustainable. The NBSAP also identifies short-, medium-, and long-term actions that need to be taken, institutional responsibilities, and financial needs for the identified actions and implementation of the UNCBD. The NBSAP identifies climate change as a serious risk to biological diversity in Afghanistan, particularly as a result of drought and desertification, but also notes "climate change has not been a consideration in the national or sectoral plans of the Government."

Project Name: National Rural Access Programme (NRAP)

Lead Implementer(s): MRRD

Relevant Focus Area(s): Infrastructure and energy

NRAP, formerly known as the National Emergency Employment Programme (NEEP), was established in 2002 with the goal of increasing access to rural infrastructure and providing rural labourers with employment opportunities. Following a 2005 assessment of NEEP, the programme was renamed NRAP and its strategic focus was redefined to be the provision of rural road access networks to better connect rural communities with essential services, facilities, goods, and markets. NRAP's is being jointly executed by MRRD and the Ministry of Public Works (MoPW) with the objectives of establishing a national rural road network, increasing rural employment opportunities via the construction of rural roads, and enhancing the capacity of rural communities and the private sector to manage, deliver, and maintain public transportation facilities.

Project Name: National Solidarity Programme (NSP)
Lead Implementer(s): MRRD
Relevant Focus Area(s): infrastructure and energy
NSP was established in 2002 in order to develop the ability of Afghan communities to identify, plan, manage, and monitor their own development projects, and is based on the Afghan traditions of ashar (communities working together as volunteers to improve community infrastructure) and jirga (councils comprised of respected members of the community). In order to promote greater community involvement in development projects, the NSP has established approximately 40,000 Community Development Councils (CDCs) across the country that act as lead implementers of community-based activities for rural development, strengthening local governance, alleviating poverty, and promoting rural reconstruction and infrastructure development. Under the NSP, these CDCs are responsible for developing Community Development Plans (CDP), which is a tool to identify each community's development needs. Based on this CDP, CDCs prepare proposals that are submitted to the NSP for consideration, primarily in the areas of transportation, water supply and sanitation, irrigation, power, sustainable livelihoods, and education.
Project Name: Rural Water Supply, Sanitation and Irrigation Programme (Ru-WatSIP)
Lead Implementer(s): MRRD
Relevant Focus Area(s): Infrastructure, water
Ru-WatSIP was established by MRRD in 2003 in order to develop policies, formulate strategies and plans, and implement activities for rural water supply, sanitation, and hygiene. MRRD's Water and Sanitation Department is leading execution of Ru-WatSIP and includes the establishment of a national policy framework for water sector, construction of water wells and pumps to provide clean drinking water to rural communities, construction of sanitation facilities to improve hygiene in rural communities, and provision of capacity building trainings on water, sanitation and hygiene to government staff, NGOs, private sector companies, and local communities.
Project Name: Strengthening the Resilience of Rural Livelihood Options for Afghan Communities in Panjshir, Balkh, Uruzgan, and Herat Provinces to Manage Climate Change Induced Disaster Risks (LDCF-2)
Lead Implementer(s): MAIL
Relevant Focus Area(s): Forests, rangelands, and natural disasters
The LDCF-2 project was launched in January 2015 and is Afghanistan's second full-size GEF climate change adaptation project awarded by the GEF-administered LDCF. This five-year project is being executed by MAIL, with technical support provided by UNDP, with the goal of reducing livelihood vulnerability in drought- and flood-prone communities through the rehabilitation and sustainable management of critical rangelands and watersheds, while enhancing and diversifying rural incomes and livelihood opportunities.

ANNEX 2: OVERVIEW OF RELEVANT GOVERNMENTAL INSTITUTION STRUCTURES

Institution	Division/Directorate	Brief Description
Afghanistan Meteorological Authority (AMA)	Weather Forecasting Office	The Weather Forecasting Office is responsible with plotting weather maps, coordinating with the NATO-led International Security Assistance Force (ISAF), gathering atmospheric and short- and long-term weather forecasting, and sharing weather forecasts with other relevant agencies on a daily basis.
	Research Institute Office	The Research Institute Office is comprised of subsections focused on climate analysis, agriculture, and hydrology that are responsible for recording weather and climate data in AMA's database as well as analysing and disseminating this information to other relevant offices and institutions.
	Observation and Network Office	The Observation and Network Office functions as a hub for gathering climate and weather data from its 26 weather stations across the country, as well as disseminating this data via daily weather briefs sent to the country's airports. In addition, this office also generates climate forecast reports for MAIL that aim to identify the primary risks and opportunities for agricultural production.
	Montage Weather Station Office	The Montage Weather Station Office is responsible for the monitoring, maintenance, and installation of weather stations across the country, of which the latest to be installed are in Kunduz and Badakhshan provinces.
Afghanistan National Disaster Management Authority (ANDMA)	Policy and Planning Directorate	The Policy and Planning Directorate coordinates response in the event of a disaster, promotes DRR as a national priority, and works towards streamlining the implementation of the Hyogo Framework for Action.
Ministry of Agriculture, Irrigation, and Livestock (MAIL)	General Directorate for Planning	The primary mandate of the General Directorate for Planning is to ensure the adherence to and implementation of the NADF through the development of policy frameworks for agriculture and rural development issues. This Directorate is comprised of four sub-unit Directorates for planning and policy, programme coordination and development, agricultural statistics, and the private sector.

Institution	Division/Directorate	Brief Description
Ministry of Agriculture, Irrigation, and Livestock (MAIL)	Irrigation Directorate	The Irrigation Directorate was established based on MAIL's mandate, as defined in Article 11 of the Water Law, and includes the following responsibilities: development of policies and strategies for irrigation; development and maintenance of an irrigation database; conducting research, surveys and studies on irrigation; training of MAIL Irrigation Directorate staff; and planning, implementation, and monitoring of on-farm water management projects.
	General Directorate of Natural Resource Management	The General Directorate of Natural Resource Management is responsible for the protection and sustainable management of the country's natural resources. It is comprised of three sub-unit directorates for rangelands, forestry, and protected areas, with a particular focus on land use planning, biodiversity conservation, and the sustainability of forest and rangeland resources.
Ministry of Energy and Water (MEW)	Water Resource Management Directorate	The Water Resource Management Directorate is responsible for the management and data collection of water resources through hydrological stations, as well as facilitating water governance at the river basin level and providing technical support in the development of laws and policies on water. In total, MEW has 38 hydrological stations installed on the Kabul River, 28 stations on the Kunduz River, 17 stations on the Harirud River, 15 stations on the North River, and 7 stations on the Helmand River, all of which gather data on water levels, precipitation, temperature, and relative humidity.
Ministry of Energy and Water (MEW)	Water Policy Design and Planning Directorate	The Water Policy Design and Planning Directorate is responsible for the planning, prioritization, and coordination of activities in Afghanistan's water sector. This Directorate also plays a key role in ensuring that MEW fulfils its responsibilities, as defined in the Water Law, to ensure the sustainable management of the country's water resources. This Directorate's functions also include close coordination with partner institutions and organizations on national water planning and management, the development of policies for effective water management, and working with local communities to ensure that national and community water supply plans and programs are consistent with provisions of the Water Law and other governance mechanisms for natural resource management.

Institution	Division/Directorate	Brief Description
Ministry of Energy and Water (MEW)	Energy Policy Directorate	The Energy Policy Directorate was established in 2009 and is responsible for ensuring energy efficiency and the growth of the energy sector through policy development, particularly with an emphasis on reliable, sustainable, accessible, and environmentally responsible energy sources.
	Renewable Energy Directorate	The Renewable Energy Directorate is responsible for the development of the country's renewable energy resources, including solar, wind, geothermal, bioenergy and hydropower, as well as promoting strategic investments in the transition to a cleaner, more secure national energy production system. This Directorate has also been involved in providing analysis for the Electricity Services Law, the draft Rural Renewable Energy Policy, the draft Renewable Energy Strategy, and the draft Wind & Solar Atlas and Investment Plan.
Ministry of Rural Rehabilitation and Development (MRRD)	Industry and Rural Energy Department	The Industry and Rural Energy Department is tasked with the development and promotion of renewable energy sources at the rural level, including wind, solar, biogas, and small hydropower, all of which have strong elements of climate change adaptation and mitigation.
	Planning Department	The Planning Department is responsible developing rural development plans based on inputs received from the community level, as well as the harmonisation of plans across other Departments. The Planning Department is also the lead unit for the management of MRRD's database and GIS mapping of rural development projects across the country.
	Water and Sanitation Department	The Water and Sanitation Department is responsible for the development of policies and plans, the mobilization and allocation of resources, monitoring and evaluation, information management, and overall stakeholder coordination in the area of water supply and sanitation. This Department is also leading the execution of the Rural Water Supply, Sanitation and Irrigation Programme (Ru-WatSIP) project.
	National Rural Access Department	The National Rural Access Department is responsible for the construction of rural road access networks to better connect rural communities with essential services, facilities, goods, and markets. This Department works in close coordination with and is supported technically by the National Rural Access Programme (NRAP).

Institution	Division/Directorate	Brief Description
Ministry of Rural Rehabilitation and Development (MRRD)	Social Protection Directorate	The Social Protection Directorate is mandated to respond to natural, environmental and other disasters, and to mobilise and facilitate resources for affected populations. Thus, this Directorate acts as the co-ordinating body for early recovery and mitigation of disasters in co-operation and collaboration with different programmes and directorates of MRRD.
National Environmental Protection Agency (NEPA)	Climate Change Division	The Climate Change Division is comprised of three units for Climate Change Adaptation, Climate Change Mitigation, and GHG Mitigation. The Climate Change Division leads national climate planning and programming, and is responsible for the implementation of adaptation and mitigation programmes, as well as promoting public awareness about climate change in Afghanistan, convening training workshops to build national capacity to address climate change, developing strategies and policies for climate change, and cooperation and coordination with the UNFCCC Secretariat.
	Natural Heritage Division	The Natural Heritage Division is responsible for developing Afghanistan's national protected areas system, including national park management policies and procedures, for the conservation and protection of the country's environment and biodiversity. The Natural Heritage Division has also developed Afghanistan endangered and protected species list for the International Union for Conservation of Nature (IUCN), as well as developed Afghanistan's NBSAP and other regular reporting to the UNCBD.
	Environmental Planning Division	The Environmental Planning Division is responsible for the consolidation of work plans, the standardization of development projects, and formation of short-, medium and long-term environmental policies and plans in conjunction with other NEPA divisions. In terms of mainstreaming climate change, this division can play the important role of coordinating among various actors to ensure that climate plans are well integrated into development planning as well as harmonized across the various players relevant to climate change programming in Afghanistan.
	Policy and Legislation Division	The Policy and Legislation Division links NEPA with the National Assembly (Meshrano and Wolesi Jirga) in order to present national policies, as well as pass policy and legal frameworks through legislative procedures.

Institution	Division/Directorate	Brief Description
	International Relations Division	The International Relations Division is responsible for the coordination and implementation of all 13 MEAs to which Afghanistan is a party, including the UNFCCC and UNCBD. This division also functions as a bridge between NEPA, the Ministry of Foreign Affairs (MoFA), and UN Agencies for Afghanistan's active and meaningful participation on the global environmental stage, including at events such as Conference of Parties (COPs) for the UNFCCC and UNCDB.
	Environmental Impact Assessment (EIA) and Sustainable Development Division	The EIA and Sustainable Development Division is responsible for certifying industrial sector work based on the environmental agreements and policies enacted by the Government. This division's relevance to climate change is primarily in the area of GHG management through climate change mitigation, as well as assessing the risks of climate change to development projects and proposing adaptation and mitigation options.

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ACRONYMS

ACCSAP	Afghanistan Climate Change Strategy and Action Plan
AITF	Afghanistan Infrastructure Trust Fund
AMA	Afghanistan Meteorological Authority
AMIT	Affordable Micro-irrigation Technology
ANDMA	Afghanistan National Disaster Management Authority
ANDS	Afghanistan National Development Strategy
ANREP	Afghanistan National Renewable Energy Policy
APAN	Asia Pacific Adaptation Network
ARD	Agriculture and Rural Development Cluster
AREDP	Afghanistan Rural Enterprise Development Programme
ARTF	Afghanistan Reconstruction Trust Fund
CARD-F	Comprehensive Agriculture and Rural Development – Facility
CDC	Community Development Council
CDP	Community Development Plan
CDKN	Climate and Development Knowledge Network
CEC	Committee for Environmental Coordination
COP	Conference of Parties
CSO	Afghanistan's Central Statistics Organization
CTCN	Climate Technology Centre and Network
DDMC	District Disaster Management and Response Committees
DRR	Disaster Risk Reduction
EWS	Early Warning System
FAO	UN Food and Agriculture Organisation
FEWS NET	Famine Early Warning System Network
GEF	Global Environment Facility
GHG	Greenhouse Gas
HCDM	High Commission for Disaster Management
HFA	Hyogo Framework for Action
ICE	Interministerial Commission on Energy
ICRE	Interministerial Commission on Renewable Energy
INC	Initial National Communication under the UNFCCC
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resource Management
LDC	Least Developed Country
LDCF	Least Developed Countries Fund
LEDS	Low Emission Development Strategies
MAIL	Ministry of Agriculture, Irrigation, and Livestock
MDG	Millennium Development Goal
MEA	Multilateral Environmental Agreement
MEW	Ministry of Energy and Water
MoEc	Ministry of Economy
MoEd	Ministry of Education
MoF	Ministry of Finance

MoFA	Ministry of Foreign Affairs
MoIA	Ministry of Interior Affairs
MoMP	Ministry of Mines and Petroleum
MoPH	Ministry of Public Health
MoPW	Ministry of Public Works
MoT	Ministry of Transport
MRRD	Ministry of Rural Rehabilitation and Development
MUDA	Ministry of Urban Development Affairs
NABDP	National Area-based Development Programme
NADF	National Agricultural Development Framework
NAMA	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Programme of Action
NBSAP	National Biodiversity Strategy and Action Plan
NCCC	National Climate Change Committee
NCSA	National Capacity Self-Assessment
NDMIS	National Disaster Management Information System
NEAC	National Environmental Advisory Council
NEAP	National Environmental Action Plan
NEPA	National Environmental Protection Agency
NES	National Environment Strategy
NFMP	National Forestry Management Policy
NGO	Non-governmental Organization
NPP	National Priority Programme
NRAP	National Rural Access Programme
NSP	National Solidarity Programme
PCDMB	UNEP Post-conflict and Disaster Management Branch
PDMC	Provincial Disaster Management and Response Committees
PGO	Provincial Governor's Office
RAMA	Rehabilitating the Afghan Meteorological Authority
RCP	Representative Concentration Pathway
Ru-WatSIP	Rural Water Supply, Sanitation and Irrigation Programme
SCCF	Special Climate Change Fund
SCWAM	Supreme Council for Water Affairs Management
SEAC	Sub-national Environmental Advisory Council
SNAP	Strategic National Action Plan for Disaster Risk Reduction
SNC	Second National Communication under the UNFCCC
STAR	GEF's System for Transparent Allocation of Resources
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
USGS	United States Geological Survey
WHO	World Health Organisation
WMO	World Meteorological Organisation

UNEP

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