

Afghanistan



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1. Introduction

This Environment and Climate Change Brief, presenting an overview of current environment and climate change issues in Afghanistan, has been written to assist the Afghanistan unit at Sida and the Development Cooperation Section at the Swedish Embassy in Kabul in preparing a basis for a new strategy.

The purpose of this overview is to briefly present key environmental challenges and opportunities in Afghanistan and to facilitate integration of environmental aspects into the MPDA for Afghanistan that will be updated as part of the preparations for a new strategy.¹

The Swedish Government has identified environment and climate change as one of five perspectives to permeate Sida's activities. This is reinforced in Sida's Environmental Policy² which states that the "bio-physical environment with well-functioning ecosystems and a stable climate is the foundation for development and all human life. Sustainable management of the earth's resources is therefore a prerequisite for reduced poverty and sustainable societies – for current and future generations." The Environmental Policy further requires that environmental aspects are systematically integrated into all Sida's operations and sectors.

All people interact with environment and the changing climate. People living in poverty, whether they live in rural or urban areas are often extra vulnerable by being directly exposed to natural disasters and dependent on natural resources for their livelihood. The conceptual framework for multidimensional poverty acknowledges how environment and climate change relate to people living in poverty.

Afghanistan, being a war-torn country, is struggling with a lack of data and gaps in information. The difficulty of conducting analysis in Afghanistan is illustrated by the absence of basic statistics such as population size and aggregated data. Affected by physical insecurity and weak state capacity, data collection and management continues to be a constant challenge in the post-international intervention period.

The data used for this report is as far as possible based on formal and acknowledged sources. Some of the data may not fully correspond to approved and well-cited sources as information is simply lacking. Some of the guiding questions asked in the MDPA may not be answered, or shouldn't be answered referring to possibly faulty data. If at all, very few areas where there are statistics have gender disaggregated data. For more information see annex 3. In this report a high variety of data is being used for the aim of cross-checking, therefore included in the literature list, annex 2.

¹ This Environmental Policy Brief was written by Anja-Christina Beier at Sida's Helpdesk for Environment and Climate Change, at the request of Karin Kronlid, Afghanistan unit. The views expressed in this Environmental Policy Brief are those of the author and do not necessarily represent the views of Sida.

² Sida's Environmental Policy (2017)

2. Key environmental and climate challenge aspects in Afghanistan

Afghanistan is a landlocked, mountainous and very dry country with an area of 652,230 square kilometres³ located in South and Central Asia with a population of about 26 million⁴. Afghanistan is bordered by Pakistan in the south and east; Iran in the west; Turkmenistan, Uzbekistan and Tajikistan in the north; and China in the far northeast. The Hindu Kush Mountains is a range of high mountains that transcends Afghanistan's geography in a northeast-to-southwest direction from the Pamir Mountains in the north, see fig 1. The country's major rivers originate from the mountain range.

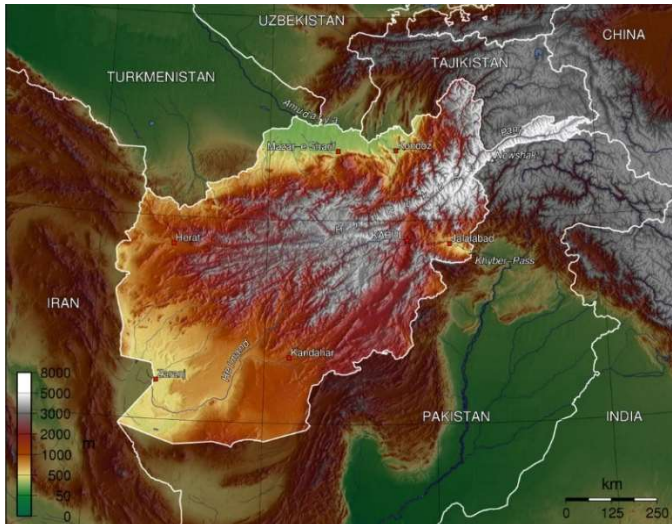


Fig 1: The Pamir, Hindu Kush and Kuh-e-Baba Mountains in Afghanistan
(https://sv.wikipedia.org/wiki/Afghanistans_geografi)

2.1 The natural environment and climate in Afghanistan

Climate: Afghanistan has an arid and semi-arid continental climate with cold winters and hot summers. The climate varies substantially from one region to another due to dramatic changes in topography. The wet season generally runs from winter through early spring but the country on the whole is dry. The climate classification of Afghanistan is desert or desert steppe climate.

Temperatures often range greatly within the country. Mean annual temperatures show generally warm lowlands surrounding the central highland with cooler temperatures. Variations in temperature during one day may range from freezing conditions at dawn (as low as -20 °C in the mountain areas) to upper 35 °C at mid-day (mainly in southern lowlands).⁵ Precipitation also varies substantially; the deserts receive less than 100 mm of rain a year, whereas the mountains receive more than 1000 mm of precipitation, primarily as snow in the mountainous areas. Airflow does also have a high impact on the country's climate.

Natural resources and biodiversity: The natural resources and associated biological diversity provide the basis of a livelihood for up to 80% of the population. Agriculture, horticulture, animal husbandry, and forestry form the backbone of the economy.

Important features of Afghanistan's biodiversity is the comprising of several ecological zones, ranging from mountains, deserts, open woodlands and forests, hosting globally significant wildlife species

³ CIA World Fact Handbook

⁴ Last estimation 2008 by CIA 34 100 000. For more information see annex 3

⁵ EU country profile 2017; NEPA 2015; Shroder 2014

and cross-border and seasonal migration which helps to maintain animal populations.⁶ The country is divided into 15 smaller eco-regions of which four are considered as endangered⁷, eight as vulnerable and only two as relatively stable and intact. As an arid country the few natural wetlands that do exist are of great significance to biodiversity.

The different topography and climate variety of the country provides a unique blend of different forest types within their biome; shrub land, scrub forest, and trees including evergreen conifers and junipers, and broadleaf evergreen and deciduous.⁸ As the forest represent some of the most diverse ecosystems in Afghanistan, it also contributes to ecosystem services such as stabilising soil, preventing erosion, enhancing the land's capacity to store water, and moderate air and soil temperatures. The forests of Afghanistan has traditionally been utilised extensively for food and non-timber forest products (NTFP).

Ecosystem services have a very important role to play in order to reduce ecosystem shifts and provide for a sustainable environment. However, in Afghanistan also the ecosystem services have been interfered through the changes in the environmental context of the country. For example the change in forest cover has highly affected water flows and quality and overall ameliorating water events.

Agriculture: Since Afghanistan is a rural country, agriculture and livestock herding are major subsistence sectors, and half of the country's GDP are supported by agriculture. The total arable land in the country is about 8 million ha (approximately 12% of total land area). The average size of an Afghan farm is 5 hectares.⁹

At present, the rangelands¹⁰ of Afghanistan occupy about 30 million hectares, representing roughly 45% of the country's territory. However, large areas which are considered 'barren land'¹¹ or 'waste land' are used for grazing, particularly in the winter. The major cultivated areas are located in the north and west of the country¹².

The history of irrigated agriculture in Afghanistan is ancient. Except for a few areas where rain-fed agriculture can be practiced, about 85% of the total crops in Afghanistan are grown under irrigation due to unreliable or inadequate rainfall. Canal irrigation (Karez) is by far the most commonly used method of irrigation in Afghanistan. The irrigated land is usually located in the river basins of the North, West, and the Southwest of the country. Rain-fed areas are located in the north, northeast and west of the country.¹³

Wheat, corn or maize, rice, and barely are stated to be the major cereal crops grown by Afghan farmers. The major staple crop is reported to be wheat, of which 80% is sown as a winter crop.

Deserts: Afghanistan's geomorphology has historically comprised highlands, rugged terrains and flatlands, and partly arid deserts. There are five major deserts in Afghanistan; Dsht-e Khash, Dasht-e Leili, Dasht-e Margo, Dasht-e Naomid, and Registan Desert. It is estimated that more than 70% of the land is highly vulnerable to desertification and the deserts have been rapidly expanding in southern,

⁶ UNEP 2008; UNEP/NEPA 2008

⁷ Endangered eco-region means that flora and fauna changes in such a way in its richness and/or endemism that it changes into another eco-region.

⁸ FAO 2014; Breckle 2001; Shalizi 2016

⁹ Rahmani et al 2014; Pedersen 2006

¹⁰ Rangelands are here defined as grasslands, shrublands, woodlands (not forest) wetlands and semi-deserts that are grazed by domestic livestock and/or wild animals.

¹¹ Those ecosystems in which less than one third of the area has vegetation or other cover.

¹² FAO aquastat

¹³ ICARDA 2002; Watershed Atlas 2004; Qureshi 2002; Shroder et al 2016

eastern, northern and central regions of the country. It is only in the western parts, within the monsoon range, where desertification is not a risk.

Water resources: Afghanistan's relatively rich water resources depend mainly of the high mountain ranges such as Hindu Kush and Kuh-e-Baba that function as natural water storage with snow during the winter and snowmelt in the summer that supports perennial flow in all the major rivers.¹⁴ Over 80% of the country's water resources (surface water) originate in the Hindu Kush mountain range. Almost all major rivers in Afghanistan originate in the central highlands region or the north eastern mountains. There are five watersheds¹⁵ in the country and four non-drainage areas¹⁶ see fig 2. Many rivers are shared with Afghanistan's neighbouring countries.

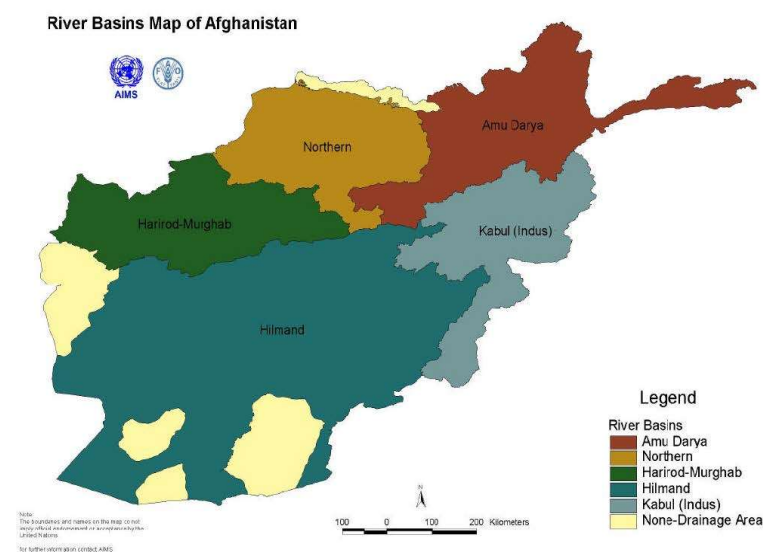


Fig 2: Overview of the five major watersheds. (Watershed Atlas, 2004)

Water availability in Afghanistan is however unequally distributed over space and over time. Water resources remain burdened by many constraints and the relatively significant amounts of water available in the country hide important variations within and across river and sub-river basins. The availability of water in Afghanistan is also characterized by considerable intra- and inter-annual variations. Furthermore, the distribution of the available water does not always correspond with the location of the irrigable land and the settled populations. To these variations, due to geography and topography, is added the challenge of poor water resource management.¹⁷

In theory, Afghanistan is not a water-scarce country with estimated overall water availability of 75 billion cubic meters (BCM) of potential water resources of which 55 BCM is surface water and 20 BCM is groundwater.¹⁸ Even though Afghanistan has a good annual precipitation, most of the precipitation falls as snow in the winter and early spring which causes long period of summer drought in big parts of the country, except in areas receiving summer monsoon rains.¹⁹ It has also

¹⁴ ICARDA 2002; FAO; Watershed Atlas 2004

¹⁵ Sources refer to different numbers of watersheds however the five major river basins are: Amu Darya/Panj, Northern River Basin, Hari Rud Basin, Kabul River Basin, Helmand-Siistan Basin, (UNEP 2008; Shroder 2016; FAO Aqustat 2012)

¹⁶ Namaksar, Registan-i Sedi, Registan and Dasth-i Shortepa (Watershed Atlas 2004)

¹⁷ Mack et al. 2014; Habib 2014; USGS Fact Sheet 2014

¹⁸ Qureshi 2002

¹⁹ Shroder 2014; NEPA 2014

been noted that snowmelt occurs earlier and with less amount at a time when the farmers are not in need of water. Later in the season as the crops begin to grow there are however no water available with negative impact on the yield and thus farmers livelihood.

Despite being at the top of the eight major watersheds of the region, Afghanistan has the lowest water storage capacity²⁰ of any country in the region and the lowest storage rates in the world.²¹ Recharging water capacity depends mainly on precipitation. Other factors affecting recharge of surface water and groundwater aquifers includes; evaporation, transpiration, pumping for irrigation and water supply, surface flow and urbanisation and possibly climate change. There are however no data on these processes in Afghanistan.

Surface water quality is comparability good in the upper basins of all rivers throughout the year. In spite of the large irrigated areas in the lower basins, the water quality is assessed as good.²² The groundwater quality is in generally good, even though there is great variability within the country. The groundwater in lower regions and urban areas is for example frequently saline/brackish, polluted and not drinkable.²³

Minerals: Despite being one of the poorest nations in the world, Afghanistan holds one of the richest troves of minerals in the world. The mountainous environment is home to a variety of geological formations with an abundance of minerals; precious metals such as gold, gemstones, hydrocarbons and industrial minerals. In addition to coal, copper and iron ore, Afghanistan has extensive resources of oil, natural gas, and limestone²⁴.

The mining sector has the potential to generate major government revenue for the country and is recognised as a valuable source of revenue to develop the national economy. It is reported that the significant mineral endowment is worth upwards of US\$1 trillion, however much of that wealth is locked in the ground pending development of supporting infrastructure that will link mines to global markets²⁵. If not well maintained, mining projects can increase the risk of possible natural hazards.

Energy: Reliable energy data for Afghanistan is about as scarce as energy in Afghanistan. In 2005, it was estimated that 20% of the population had access to public power (grid-supplied) on certain days for a limited number of hours²⁶. According to CIA, 43% of the total population had access to electricity in 2012; 83% in urban areas and 32% in rural areas.

Nationally, seven grids distribute power with supply coming from domestic hydro generation; imported power; and thermal generation. Isolated diesel generation has dramatically increased since 2002 and will most likely continue to play a large role in power supplies. Energy consumption is comprised by hydro and imports by 77%, coal 16%, natural gas 6% and petroleum 1%²⁷. Rural populations rely heavily on natural resources for their energy use. Other energy sources used for basic cooking and heating includes local waste, small wood, batteries, coal, solar panels, and kerosene.

Hydro, both large and small, represents significant untapped resources, and it is estimated that Afghanistan has 18,400 MW of untapped hydro potential in the country. In addition, there is

²⁰ Water storage capacity means that water resources are stored in either man-made basins like e.g. constructed reservoirs or in natural state in e.g. underground aquifer.

²¹ Watershed Atlas 2004

²² ICARDA 2002; Qureshi 2002

²³ Watershed Atlas 2004

²⁴ NEPA 2015

²⁵ EITI REPORT 2017; EITI 2017;

²⁶ INC/UNFCCC 2015

²⁷ INC/UNFCCC 2015

potential for wind energy (total estimated capacity of 158,100 MW) and solar energy (solar radiation averages about 6.5 kWh per square meter per day and the skies are sunny about 300 days a year). Besides these, biomass/biogas and geothermal energy are other important potential sources of renewable energy for rural communities.²⁸

2.2 Major environmental challenges in Afghanistan

The unstable and unpredictable political context of Afghanistan presents great challenges to realising peace and resilient development in the country and not least to provide people the basic needs such as food, water, shelter, etc.²⁹. It has also tremendous impact on all natural resources of the country and how they are managed – or rather not managed. The main cause of environmental degradation, and to some extent collapse, has been the mismanagement of natural resources that followed the collapse of national and local institutions during decades of war and conflict.

2.2.1 Impacts of Climate Change

According to the United Nations Framework Convention on Climate Change, Afghanistan is ranked among the most vulnerable countries in the world to the adverse impacts of climate change. At the Global Risk Index for 2018, Afghanistan is among the countries most prone to climate change and least prepared for the impacts. The risks depend partly of Afghanistan's geographical location and topography, but the country's vulnerability to hazards also depends on the combination of high risk and low awareness, preparedness and capacity of disaster risk management.

Afghanistan is experiencing both slow onset³⁰ events such as increasing temperatures; glacial retreat; degradation of land, forests and ecosystems; loss of biodiversity and ecosystem services; and desertification as well as rapid events such as flash floods, and extreme weather events.

Temperatures are predicted to increase by 2.8°C and 5°C which will lead to even drier conditions³¹, especially in the southern parts of the country and prolonged and enduring droughts throughout Afghanistan. Long periods of drought can also be followed by intense rainfall with catastrophic consequences. This causes the country to suffer from two rather contrary threats: water shortages, often amounting to serious drought, and water excess, causing frequent destructive floods³².

The Hindu Kush and Pamir Mountains regions are extremely vulnerable to the impacts of climate change. Remote sensing demonstrates systematic loss of significant ice mass which subsequently has negative impact on water resources and water flows³³. As higher temperatures are projected the scenario of less water flows and earlier snow melting will impact even further. More rapid and earlier spring snow melt also creates risks of flash floods which leads to mud- and landslides, in many situations where there are no natural barriers e.g. forest.

As the snow and glaciers in the Hindu Kush and Pamir Mountains are a large source of freshwater for Afghanistan, decreased amount of water can have severe impacts on food production and people's livelihood. Afghanistan's relatively dry climate further accentuates the significance of these water flows for people's survival³⁴. A drier and warmer climate will thus have consequences for farmers relying exclusively on rain-fed agriculture, particularly farmers in the northern and western river

²⁸ NEPA 2015

²⁹ Universal Declaration of Human Rights 1948

³⁰ Slow onset events evolve gradually from incremental changes occurring over many years or from an increased frequency or intensity of recurring events, whereas a rapid event may be a single, discrete event that occurs in a matter of days or even hours. (IPCC technical paper)

³¹ NEPA 2015; Shroder 2014

³² Beekma 2011

³³ Pelto 2017; Bishop 2014

³⁴ ICIMOD 2007

basins, where more than 60% of the rain-fed land is located.³⁵ Increased soil loss, reduced river flow from earlier snow melt, and less frequent rain during peak cultivation seasons will impact upon agricultural productivity and crop choice availability. It is estimated that by 2060, large parts of the agricultural economy will become marginal without significant investment in water management and irrigation.³⁶

Desertification and prolonged droughts will decline rangelands of which a majority of families rely on for their livelihoods. Livestock numbers may be reduced by up to 50% during the periods of drought due to outward migration and starvation, reduced availability of animal feed, and less funds available for livestock husbandry.

Climate change is already having serious impacts on Afghanistan's ecosystems and biodiversity, its agriculture, economy, and food security as well as impact on people's health and security situation. And the impacts will worsen leading to severe consequences for socio-economic development in the country. A vulnerability assessment of seven different sectors revealed that water is the most vulnerable sector followed by forestry and rangeland, agriculture, health, biodiversity, energy and waste.³⁷ However lack of available data on meteorological records and trends from the region makes it difficult to predict and identify with refinement how the climate change will progress.

Afghanistan will have to adapt to steep temperature increase and changes in precipitation patterns. In the face of an already existing adaptation deficit in the country, Afghanistan urgently needs enhancement of adaptation measures and strategies in all sectors³⁸.

In Afghanistan there are insufficient data and limited understanding of climate change-induced disaster threats both across institutions at the national and sub-national levels and at the community level. There is an absence of centralized data management system for climate change induced disasters and disaster management and an absence of effective monitoring and evaluation mechanism to track impacts of interventions. Further, there is limited research on the gaps in contingency plans and emergency preparedness and response at village and district levels. Population and gender sensitive data is missing in the country, which constrains the formulation of adequately targeted responses.³⁹

2.2.2 Natural hazards

Afghanistan is extremely susceptible to recurring natural disasters, due to its geographical location and years of environmental degradation. Natural disaster risks have been growing with decades of war and conflict with negative impact on soil, forests, water and biodiversity. Climate change is an additional cause and impact on disaster risks.⁴⁰

Afghanistan regularly experiences earthquakes and avalanches in the mountainous areas resulting in loss of lives, livelihoods and property which contributes to high levels of poverty across the country.⁴¹ Floods and droughts caused by irregular precipitation patterns are the most frequent natural hazards affecting all 34 provinces in Afghanistan, but in particular the country's Northern provinces. Seasonal rains and spring snow-melt regularly result in life-threatening flash floods in the region.

During 2018, North and Western Afghanistan faced their most severe drought in decades as cumulative effects of several years of low rainfall had created agriculture collapse. Record low snow fall in winter time was followed by a drop in rainfall with up to 70% less than normal in some places.

³⁵ NEPA 2015; Shroeder 2014

³⁶ INC/UNFCCC 2015; UNEP in Afghanistan 2009

³⁷ NAPA 2009; NEPA/UNFCCC 2015

³⁸ NEPA/UNFCCC 2015

³⁹ UNDP 2018

⁴⁰ UNEP 2008; IRIN report 93781; ICIMOD 2009

⁴¹ WFP 2018

Water levels became low and wells ran dry. Additionally, due to low crop production, the purchasing power declined which in combination with the ongoing conflict caused disruption of normal livelihoods. It is estimated that up to 1.4 - 2 million people are in need of life-saving help.⁴² It is also estimated that more than nine million Afghans are in need of food security assistance and nearly six thousand farming families are targeted by FAO for emergency assistance. With little to nothing left people are forced to migrate in search of relief. Only in the second half of 2018, more than 220 000 rural people migrated to larger settlements in Western Afghanistan.⁴³ The complexity is that food and agriculture problems cannot be separated from problems caused by conflict, corruption and illegal trade of natural resources⁴⁴.

2.2.3 Lack of water and sanitation

Despite significant improvements in the past ten years, 39% of Afghans still lack access to an improved⁴⁵ water source and only 39% have access to improved sanitation⁴⁶. The proportion of the total population using piped water is only 12%, see Table 1. Lack of indoor-piped water affects women and children disproportionately since water collection is generally their responsibility⁴⁷. Access to drinking water differs between urban and rural areas, but also between and within rural areas. Only the data for unimproved is calculated for urban and rural. It is estimated that only 2% of urban population and 34% of rural population depend on unimproved water. Surface water is assessed to be unsafe. However, in remote areas with low population density, the water from rivers and streams will provide safe drinking water.

Access to water	% of population
Proportion of pop using piped water	12%
Proportion of pop using non-piped improved water services	43%
Proportion of pop using unimproved drinking water services	39%
Proportion of pop using surface water	6%

Table 1. Access to water for household use in Afghanistan. (Data does not provide exact statistic; is not consistent, not complete nor gender aggregated. All information is based on estimations and sources may differ).⁴⁸

⁴² Reliefweb: Afghanistan: Drought - Apr 2018; IFRC – Afghanistan drought Plan of Action; UNOCHA 2018

⁴³ FAO 2019

⁴⁴ Cordesman 2010

⁴⁵ The category 'improved drinking water sources' includes sources that, by nature of their construction or through active intervention, are protected from outside contamination, particularly faecal matter, and therefore have potential to deliver safe water. These include piped water in premises, public standpipe, boreholes or tubewells, protected springs, rainwater collection, and packaged/delivered water. There is a new categorisation that is divided into safe, basic and limited water as improved does not necessitate safe water. Unimproved sources' include unprotected dug well, unprotected spring, cart with small tank/drum, tanker truck, and surface water (river, dam, lake, pond, stream, canal, and irrigation channels), and bottled water. (JMP 2019)

⁴⁶ WHO Joint Monitoring Programme

⁴⁷ WHO 2018

⁴⁸ UNICEF 2018; WHO Joint Monitoring Programme

The water supply in Kabul is at risk due to groundwater depletion caused by unsustainable and uncontrolled groundwater abstractions. About 85 % of Kabul population uses unimproved drinking water from shallow wells and it is estimated that the groundwater potential will provide only half of the citizen in Kabul with estimations done today. With no systematic sewage treatment, waste management or water supply management, shallow groundwater is affected by considerable contamination and associated hygiene problems.⁴⁹

Urban population growth, land use changes, unregulated construction of deep tube wells, and poor waste management practices are all endangering existing drinking water sources, and consequently the health situation in many cities and even in some rural areas. The challenges to maintain accessible, clean, and sufficient water resources for drinking will be exacerbated by a changing climate, including already changing snow melt patterns.

With only 32% of the population having access to improved and safe toilets see Table 2, open defecation continues to be a dangerous challenge in Afghanistan causing diseases and puts people, especially children at risk⁵⁰. It is estimated that access to improved sanitation is a total of 29% and estimated 71% depending on unimproved sanitation, whereas urban population make 13% and rural population 58%.⁵¹

Access to sanitation	% of population
Proportion of pop using basic sanitation services	32 %
Proportion of pop using limited sanitation services	12 %
Proportion of pop using unimproved sanitation services	43 %
Proportion of pop practicing open defecation	13 %

Table 2. Access to sanitation services. (The data for sanitation is estimated and not consistent and sources may differ).⁵²

The rural and urban sanitation problems will continue to affect human and environmental health and, with overall population growth, urgent leadership and action is required. While the government is making strides in improving its institutional capacity to effectively manage WASH programming, WASH-related private sector participation remains under developed. Consumers lack attractive, appropriate, and affordable sanitation products and services to help improve their household latrines and waste management practices.⁵³

As described in chapter 2.1, climate change can lead to heavier rainfall and flooding which can destroy or damage water and sanitation infrastructure. When glaciers melt due to the effects of climate change, the seasonality of river flows is affected and may lead to dangerous increases of river levels, and reduce water availability in the long term⁵⁴. Damaged infrastructure can lead to contamination of water supplies and in some places where toilets are flooded or damaged, communities are at risk of abandoning important sanitation and hygiene behaviours and returning to open defecation. Cholera, for example, spreads through contaminated water and can kill children within hours if the disease is untreated. The risk of vector-borne diseases also rises with heavy

⁴⁹ Zaryab et al. 2017

⁵⁰ NEPA 2015

⁵¹ WHO Joint Monitoring Programme

⁵² UNICEF 2018; WHO Joint Monitoring Programme

⁵³ USAID 2019

⁵⁴ ICIMOD 2009

rainfall. That risk escalates with flooding – especially where there is a lack of drainage systems, which create stagnant water. Stagnant water increases dangers because it creates favourable breeding conditions for the mosquitoes that transmit vector-borne diseases such as malaria or dengue⁵⁵.

2.2.4 Challenges in water resource management and transboundary water management

Reliable water management is a critical factor for any improvements in Afghanistan's sectors of agriculture, energy and mining, and for sufficient and safe drinking water improvements for its rapidly growing population. Poor rainfall, depleted snow packs, climate change, decayed irrigation infrastructure, and weak water governance further stress water supplies and increase the risk of conflict. The management (or mismanagement) of these issues/disputes could have impact on the political stability and relations with neighboring nations.

Water is the lifeblood of the people of Afghanistan, not just for living but also for the economy, which has traditionally been dominated by agriculture. As an arid and semi-arid country, irrigation is essential for food production. Decades of war have however destroyed much of Afghanistan's infrastructure and management of irrigation and other water supply systems, which are vital for the agricultural economy. In recent years the situation has been complicated by droughts.

Overall efficiency of irrigation for agricultural use is only about 25 to 30 per cent for both modern and traditional irrigation schemes due to the following reasons:

- high conveyance losses in traditional schemes with earth canals,
- high operation losses in modern schemes with lined conveyance canals,
- high on-farm distribution losses (over-irrigation, poorly levelled land) in both traditional and modern schemes.

Additionally, there is usually a waste of irrigation water in traditional schemes during the first half of the growing season due to unregulated flood water entering the conveyance canal, and a shortage of water during the second half when river flow decreases to its annual minimum.

Many rivers in Afghanistan are shared with neighbouring countries. Therefore, the use of water from rivers with their source in Afghanistan takes on a regional dimension. The relation to neighbouring countries has however increasingly become disturbed⁵⁶ and the issue of transboundary water rights over the Helmand River are one of four main areas of conflicts identified in the relations between Iran and Afghanistan. Although the existence of a treaty stipulating water sharing agreements⁵⁷, tensions remain between Afghanistan and Iran. It appears that it is due to the fact that water sharing cannot be seen in solitary, thus other conflicting issues between the two countries are interlinked. Furthermore, any efforts by Afghanistan to increase its share of water use in the country may have additional regional security or diplomatic implications.⁵⁸

Also in the case of Pakistan it is difficult to isolate water from other disputable issues. The Kabul basin is connected to the Indus River basin by the Kabul River that flows into Indus River in Pakistan. From a water availability point of view, Afghan developments do not seem to be a significant threat to Pakistan⁵⁹ however new prospects of damming in Afghanistan have made Pakistan to react. Increasing the reach of the formal judiciary would improve the situation. Drafting clear treaties with neighbouring countries and updating the existing treaty with Iran could advance better hydro diplomacy in the region and eliminate internal and external conflict as water resources grow increasingly scarce.⁶⁰

⁵⁵ UNICEF 2016

⁵⁶ Thomas 2016; Shroder et al 2016; Hayat 2017

⁵⁷ The Afghan-Iranian Helmand-River Water treaty – 1973; Afghan-Iranian Treaty 2015

⁵⁸ NEPA 2015; Shroeder 2014

⁵⁹ Thomas et al 2016

⁶⁰ Hessami 2018

All these challenges leave Afghanistan with a water management not easy to tackle.

2.2.5 Degradation of soil, land and rangeland

Since a majority of the population in Afghanistan rely on agriculture, environmental issues such as natural resources, biodiversity and climate have large impact on people's food security and nutrition. Food security depends on agriculture production which relies on fertile soil, a sufficient amount of water and an enabling climate. Since the mid 1970 the country has not produced enough grain to meet national demand. One major cause is the deteriorated irrigation system that limits access to water and hence food production. Lack of available soil information, poor farming practices and poor land management planning also affect the yield of agricultural products negatively. Another reason is the low fertility of soil and the fact that erosion of soil and sediment creates areas of land that is hard to rehabilitate.⁶¹ According to the global assessment of soil degradation about 16% of Afghanistan's land area is severely negatively affected due to man-made activities.⁶² Besides, in several provinces in the south and southwest of Afghanistan, thousands of hectares of agricultural land have been covered by moving sands. The desertification is a real challenge both for the individual farmer and at the government level with lack of basic knowledge and technic as well as required resources at hand to halt the development.⁶³ In the light of land degradation and climate change In Afghanistan, it does not seem to be any research or programmes for analysing the need of more drought resistant varieties or crop species suitable to the different climatic areas of Afghanistan.

The country's many rangelands are in poor condition and overgrazing is a common problem. Due to the excessive numbers of herds and animals concentration, the soil surface becomes loose and highly prone to erosion by winds and rain. Also providing fodder for livestock, stock of the meadows and piling up for winter season stands a high impact on soil. Then there is little or no fertile soil left for growing natural vegetation.⁶⁴ Rangelands are also being converted to rain-fed wheat production, exposing vast areas to wind and soil erosion.⁶⁵ Furthermore, dearbification⁶⁶ or deshrubification is a result of shrub gathering including roots for wood fuel and building material which impact soil mobilisation easily eroding subsequently by wind and landslides.

Competition for land has increased since 2002 due to population pressures, rapid urbanization, displacement and resettlement and rising land values⁶⁷. Land disputes are common and often violent. Among the common causes of land disputes are the inability to address the land claims of returning refugees and Internally Displaced People (IDPs); land seizures by elites and warlords; ethnic tensions over pasture lands; prevalence of fraudulent land documents; absence of agreements over rights to pasture land and forests; and inheritance rights to private property.⁶⁸

As rangelands are made more available for purchase in the market place and as a surge in mining developments eats into pastures, more conflict may be expected, deepening divisions not only between ethnicities, but also between rich and poor and between the people and the state.⁶⁹ The current Land Management Law is also a challenge as it is not possible to establish ownership without formal documents, which in turn in most cases is in absence due to mismanagement, destruction or falsification. Further, recorded communal and customary ownership, that in previous times was

⁶¹ Rahmani 2014

⁶² UNCCD/Ministry of Agriculture and Irrigation 2006; NAPA 2009; IRIN report 73481; UNEP/NEPA 2008

⁶³ IRIN Report 73481

⁶⁴ NEPA 2015; Wily 2013; MAIL 2012

⁶⁵ NEPA 2015

⁶⁶ Removal of vegetation leading to despoliation of landscapes and diminution of water supplies.

⁶⁷ Gaston/Dang 2015

⁶⁸ LANDac 2016

⁶⁹ Wily 2013

prevalent, is not legally regulated within the Afghan law. Only less than 20% of land is accurately titled⁷⁰ which does not necessarily mean that customary practice is ineffective.

Poppy cultivation in Afghanistan has had both positive and negative impacts⁷¹, both on land governance as well as food security. It has had negative impacts on ecosystems and ecosystem services being cultivated as a mono crop.⁷² Poppy cultivation has taken over land previously available for agriculture and has used precious irrigation sources, therewith increasing rural land conflicts⁷³ and the profitable business has increased land values outside of urban areas. The flourishing opium economy and the benefits were largely captured by political and economic elites, leaving little for the average Afghan⁷⁴. However there are also the positive aspects of the opium economy as poppy is a water scarce crop with high yields and it has brought a level of cash income and food security to rural areas that other crops do not provide, although it is of a short-term prosperity. Poppy has become part Afghanistan's climate change adaptation as it is a drought resistant crop and through poppy cultivation Afghan farmers have adapted to a climate that is changing. Opium harvesting is both labor intensive and lucrative, and therefore provides economic opportunities, although the least profit stay with the farmer family.⁷⁵

Between the years 2014-2017 the *opium production* reached new records. According to the latest survey report released by UNODC the levels of opium cultivation have created multiple challenges for the country, and its neighbours⁷⁶. The significant levels of cultivation and illicit trafficking of opiates further fuel instability, insurgency and increase funding to terrorist groups in Afghanistan.

2.2.6 Desertification

30% of Afghanistan is covered by desert⁷⁷ and it is estimated that more than 70% of the land is highly vulnerable to desertification. The data does however not define the concept of desert⁷⁸.

The Registan Desert is migrating westward, encroaching on former agricultural areas. In the country's northwest, sand dunes have moved into agricultural land, due to the loss of stabilizing vegetation because of firewood gathering and overgrazing.⁷⁹ Sand dunes have blocked roads, forced residents to establish new routes and have submerged villages by windblown dust and sand. Severe droughts during previous decades have already caused the displacement of approximately 100,000 nomadic people from the Registan desert region. Most of them were moved in temporary settlements by the Helmand River. A large number were also being supported by the UN in IDP camps in Kandahar Province. Programmes with the purpose to resettle to a permanent location are ongoing, however as the former areas no longer are suitable for subsistence the problem prevails.⁸⁰

In Afghanistan the six main reasons for desertification are; deforestation, over-grazing, increased fire frequency, water impoundment and increased soil salinity, over drafting of groundwater and global

⁷⁰ Gaston/Dang 2015

⁷¹ Pain/Huot 2018

⁷² Yoshida 2010

⁷³ Gaston/Dang 2015

⁷⁴ McEwan/Nolan 2007

⁷⁵ Parenti 2015

⁷⁶ SAK 2018; UNODC 2018

⁷⁷ http://www.answers.com/Q/What_percentage_of_Afghanistan_is_desert

⁷⁸ Definition of desert is ambiguous and mapping desertification has proven to be a challenging task. Difficulties derive from the comprehensive integration of various biophysical and socioeconomic indicators that need to be considered in the evaluation process.

⁷⁹ Reliefweb 2004 Kuchi Nomads; Reliefweb 2018 Afghanistan drought

⁸⁰ UNEP 2018; Degen et al 2004

climate change.⁸¹ It seems however that the following cumulative reinforcing effects have been especially disastrous for the country; (i) the regeneration of trees and shrubs has stopped almost completely in most places; (ii) the vegetation cover has decreased, and the floristic composition of the plant communities has changed fundamentally; and (iii) the reduced vegetation cover and trampling effects of animal flocks have intensified erosion in all parts of the country leading to widespread bare bedrock. Even the small pellet droppings of the sheep and goats are commonly collected by children in some areas and used for cooking fuel by the family, which removes vital nutrients from the soil.⁸²

2.2.7 Loss of ecosystem services and biodiversity

There are many examples of biodiversity loss in Afghanistan, and the path of this has been at high speed which has made ecosystems collapse. Ecosystem services provided by biodiversity are rarely understood and usually taken for granted. Loss of these ecosystem services contribute to an environment where sustainable livelihood will be difficult to maintain.⁸³

There are several reasons for the loss of biodiversity and the collapse of ecosystems which affect and weaken ecosystem services: the conversion of land for agriculture and housing; the cultivation of pastures when rainfall is plentiful and subsequent fallowing cause erosion and loss of grazing land; over-grazing by oversized herds, and shrub and root collection during dry periods; water diversion and irrigation systems; illegal logging and hunting and; natural disasters⁸⁴. Furthermore, biodiversity has been greatly threatened by an alarming rate of ongoing droughts and desertification.

The growing population in Afghanistan puts more demands on the natural environment, leading inevitably to a decline in biodiversity if not properly managed. The rapidly increasing population of Afghanistan presents the major underlying challenge to biodiversity conservation and ultimately to the quality of life of Afghans.⁸⁵

The impacts of pollution on biodiversity in Afghanistan are spatially fragmented and seem very limited, with the exception of use and poor storage of pesticides such as DDT and benzene hexachloride, especially in the northern agricultural regions of the country. These chemicals were used intensively for several decades and may have accumulated in the ecosystem with possible impacts on biodiversity, water resources and the food chain.⁸⁶ However, there are data gaps to acquire adequate knowledge.

2.2.8 Deforestation

Deforestation and degradation of forests, forest quality and loss of forest resources presents a big challenge in the development of Afghanistan. Deforestation not only reduces forest areas but also changes the landscape configuration. Fragmentation increases habitat isolation and edge effects and reduces the size of forest patches. Deforestation has been distressingly high throughout the country for the last four decades⁸⁷. An example is taken from the woodlands in northern parts of Afghanistan, dominated by pistachio and juniper. Satellite image analysis of selected areas in 2002 found that tree density was too low to be detected anywhere, suggesting that this widespread ecosystem, once

⁸¹ UNCCD/Ministry of Agriculture and Irrigation 2006

⁸² Shroder 2014; Zdruli 2016

⁸³ UNEP/NEPA 2008, NEPA 2014

⁸⁴ Abdiani 2012

⁸⁵ NEPA 2014

⁸⁶ UNEP/NEPA 2008

⁸⁷ UNEP 2003; UNEP 2008; UNEP/NEPA 2008

covered about 38 % of the area, is on the verge of extinction in Afghanistan. More recent data suggest that the largest concentration of forest was found in the monsoon areas.⁸⁸

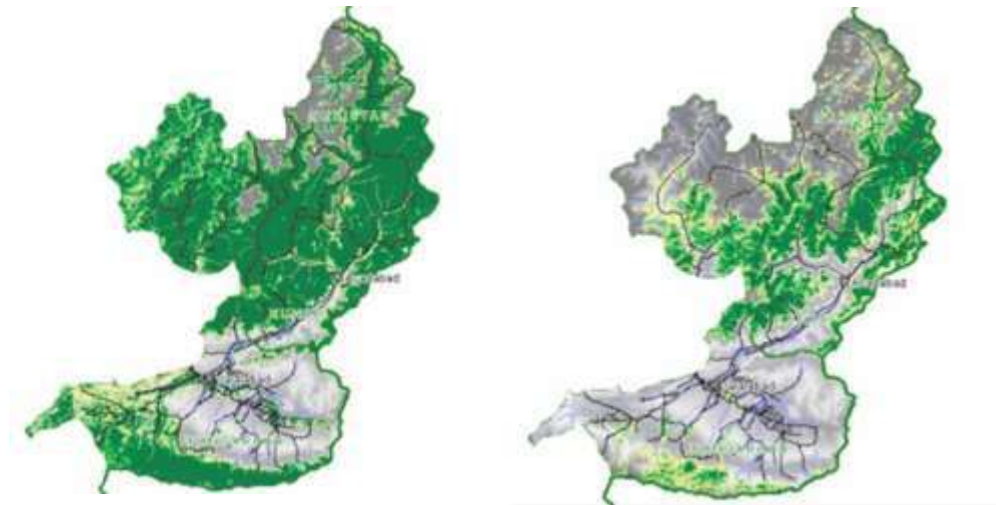


Figure 3. Forest cover change over 30 years. The left picture is 1977, the right picture 2002 (Afghanistan Initial National Communication to UNFCCC)

Conversion to agricultural land, illegal logging, charcoal production, forest fires, and plant diseases are all major causes of the reduction in forest coverage. Illegal logging has continued to be an issue for Afghanistan, although it seems that the deforestation rate have decreased since 2005. Timber is taken over the border to Pakistan where governmental control is almost non-existent, and therefore has been a very lucrative business. There is no re-plantation to make up for the loss of the cut trees.⁸⁹ Two other reasons behind deforestation are the previous and ongoing war and the cultivation of opium.⁹⁰

As forests disappear, so do other plants and animals, including many endangered species. This loss affects food security, resilience to natural disasters, energy security and access to clean water and raw materials. It is particularly devastating for the 85 percent of Afghans who live in rural areas and rely on natural resources for their livelihood.⁹¹

Afghanistan has recently registered 10 local Forest Management Associations. This is mainly seen as a step forward towards Climate Change mitigation through Sustainable Forest Management but also serves as an adaption to climate change since maintained or increased forest cover will improve biodiversity and ecosystem service such as a more even supply of water in rivers.⁹² There are examples of successful reforestation programmes with focus on locations where people who control the land genuinely want to improve and expand the forest from its currently degraded condition and not only were trees regained, but not least ecosystems services were regained⁹³.

⁸⁸ Reddy/Saranya 2017

⁸⁹ IWPR 2018

⁹⁰ Shroder 2014

⁹¹ INC/UNFCCC 2015; UNEP in Afghanistan 2009

⁹² FAO and GEF

⁹³ Groninger 2011

2.2.9 Impacts from war

A large proportion of Afghanistan's infrastructure was destroyed during decades of war and conflict. At the same time, the conflict itself together with low levels of international investment, not least during the Taliban regime, meant that there was little progress in developing or maintaining the physical capital of the country⁹⁴. To construct and manage the infrastructure of a country, natural resources are the basis. Water, trees, soil, rock, minerals and land are needed to construct roads, electrical power systems, bridges, communication systems, canals and housing for all types of activities such as schools, hospitals, government buildings, and markets.

Behind the casualties and monetary costs of the war in Afghanistan are huge environmental consequences, however it is less emphasised. Since 1979 landmines, shells, bombs, explosive remnants of war (ERW), and other unexploded ordnance, have been left behind. Chemical pollution during and after war is a serious problem, however there is extremely little documentation regarding Afghanistan. With knowledge from similar development of war torn countries it is well known that chemical pollution is a problem. Chemicals that are spread through war and conflict have tremendous impact as chemicals do not stay where they were positioned, but will travel with soil and water to pollute other areas. Many disasters caused by landmines and Unexploded Ordnance (UXO), that still cover major areas parts of the country, contribute to accelerated rural out-migration.⁹⁵

2.2.10 Waste

One of the most pressing problems facing cities of Afghanistan is the disposal of solid waste that is polluting soil and water⁹⁶. This problem is especially acute in Kabul, which has experienced rapid urban growth due to a large number of returnees and new urban dwellers, and the increase in waste from growing economic activity. Kabul is producing nearly 3000 tons of solid waste/day. It is exacerbated by the absence of a strategy to deal with the problem and a lack of capacity to respond. The capacity deficit is reflected in the estimated 70% of total solid waste that is accumulated on roadsides, back yards, in drains, rivers and open places. An absent waste management system can also be a significant health hazard as it pollutes water, soil and air.

Beside its own generation of waste, Afghanistan is also becoming the dumping ground of unwanted goods from around the world. The influx of used cars and second-hand home appliances, such as refrigerators and air conditioning units, and inferior medical supplies, is a post war effect and has already and will leave a harmful mark on the environment. There are probable reasons for this development launching out of the urge for improvements. Man-made chemicals like hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs), found in appliances such as refrigerators, are being emitted in the atmosphere causing continued damage to the earth's already fragile ozone layer and increased global warming. These types of chemicals are virtually unknown to Afghanistan's population.⁹⁷

The energy sector is also causing pollution of the soil and water table, deriving from oil and gas leakages, poor refinery and production processes, and pollution from the combustion of fossil fuels.⁹⁸ And with a malfunctioning waste management for construction debris, reconstruction of infrastructure e.g. factories and housing will further deteriorate land and water.

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⁹⁴ NAPA 2009

⁹⁵ Current Concerns 2017; Watson Institute for international and public affairs; Living on Earth 2011

⁹⁶ Hameedullah 2017; PRSP 2011:

⁹⁷ UNEP 2017

⁹⁸ UNEP 2003

environment. However, in 2016 the Government of Afghanistan initiated a banning of the importation of ozone depleting equipment and has thereafter strengthened the ozone depletion substance regulations which will force importers to acquire a license making them liable if they import greater amounts of ozone depleting substances.⁹⁹

2.2.11 Air Pollution

Household air pollution is the single most important environmental health risk factor worldwide. In Afghanistan, it is estimated that household air pollution causes over 27 000 deaths per year, whereas outdoor air pollution causes over 11 000 deaths annually. An estimated 3000 Afghans die due to air pollution impact. Women and children are at particular risk of exposure to household air pollution as they stay at home more than men do. Although there is a need for further research, strong epidemiological studies suggest that exposure to HAP contributes to low birth weight, stunting and pre-term birth.

Air pollution in the cities of has become a real problem causing respiratory chronic obstructive pulmonary disease (COPD), acute lower respiratory infections, can cause cancer and premature deaths as well as other health concerns. In Kabul, air pollution may be hastening the death of over 3,000 people every year, according to the Ministry of Public Health (MoPH)¹⁰⁰. Epidemiological studies by the MoPH indicate that cardiovascular and respiratory diseases resulting from air pollution in Kabul are increasing the country's crude mortality rate by four percent a year¹⁰¹.

Airflow has high impact on the climate in Afghanistan, while geographical factors play a role in influencing air movements, and especially in the cities these are exacerbated by high levels of man-made emissions. These include the use of leaded and poor quality fuels in vehicles and domestic generators, light industrial sources, and the burning of waste, plastics, coal and rubber. Other contributing factors are a combination of rapid population growth coupled with inadequate urban planning, and the limited provision of green spaces.¹⁰²

The problem is particularly acute during the winter when residents rely on wood and coal for heating. Further, in the absence of electricity and gas, most people use any fuel they can lay their hands on (plastic, wood, rags) for heating, cooking and other purposes which adversely impact air quality¹⁰³. Lack of green zones and the loss of trees and forests resulting from recurrent drought and/or widespread deforestation have further exacerbated the situation.

3. Linkages between the environment and climate change context and the MDPA

Environmental resources are fundamental for human and social development. Therefore, the environment forms a key part of Sida's conceptual framework for multidimensional poverty analyses (MDPA). The MDPA identifies four dimensions of poverty: (1) resources, (2) opportunities and choice, (3) power and voice and (4) human security. These four dimensions are interlinked in complex ways, where improvements in one or several dimensions could lead to both positive and negative consequences in other dimensions.

⁹⁹ UNEP 2017

¹⁰⁰ The slow violence of pollution 2018

¹⁰¹ IRIN Report 82639; the Globe Post 2017; PRSP 2011

¹⁰² The slow violence of pollution 2018; NEPA 2015

¹⁰³ UNCCD/Ministry of Agriculture, Irrigation and Land

In the MDPA 2017¹⁰⁴ of Afghanistan, it is pointed out that environmental condition throughout the country varies by region because of difference in climate, ecological zones, altitudes and latitudes. Additionally, the political situation has also impacted the environmental condition, thus poverty affects differently on people.

Poverty is both a cause and a consequence of a massive human rights deficit to access basic needs such as water, food, and a secure environment. Poverty kills more Afghans than those who die as a direct result of a reason, like no access to water or armed conflict¹⁰⁵.

The impact on people living in multidimensional poverty in Afghanistan stand multiple difficulties and challenges in relation to the four dimensions in the MDPA model. Below are examples which environmental and climate change challenges will affect people living in poverty.

3.1 The Resource dimension of poverty

Resources is a key feature of environmental linkages to multidimensional poverty. Being poor in terms of environmental resources means not having access to, or power over, natural resources, biodiversity and ecosystem services that are needed to sustain a decent living standard.

Environmental resources necessary for human wellbeing include: land and fertile soil, forests and non-timber forest products (NTFP), biodiversity and ecosystems, water, energy sources, building material, and clean air. In order for people to make use of the resources they need to be available, accessible, affordable, appropriate and of good quality.

To have inadequate access to environmental resources of good quality creates a myriad of problems, particularly for people living in poverty. Degradation and overexploitation of environmental resources, e.g. deforestation, soil erosion, desertification and pollution is challenging peoples' ability to work and secure a livelihood from i.e. agriculture that people of Afghanistan are dependent on. This leads to reduced household income, negative effects on health, and constitute a severe obstacle to development.

Two examples of the most basic resources in Afghanistan are *land* and *water*. For the agriculture to persist and thrive, land of good quality and sufficient amount of water is a prerequisite. However, in Afghanistan, good productive land has become a scarcity due to the enduring conflicts, overall environmental degradation, climate change, IDPs (Internally displaced person) and people migrating. In addition, water pollution, ground water depletion, natural disasters and mismanagement of water resources, has brought many families to a poor health situation and to leave their home as it becomes impossible to persist without water.

Afghanistan is facing a major livelihood crisis. There are several major factors that contribute to the current food insecurity of Afghanistan¹⁰⁶. However the bottom line is that without a physical environment that provides land, water, biodiversity and climate, provision for food is not possible. Basic nutritious food as a resource is a challenge in Afghanistan as degraded land, soil degradation, and deforestation is spreading and multiplying over the country. And the prolonged drought situation in the last few years has left more than 5 million¹⁰⁷ Afghan's dependent for survival on food aid.

Chronic nutritional deficiency in Afghanistan is largely the result of poor feeding¹⁰⁸. For example, only half of the Afghan infants are exclusively breastfed in their first six months, and their exposure to

¹⁰⁴ Analysis of multidimensional poverty – Afghanistan 2017

¹⁰⁵ Cordesman 2010

¹⁰⁶ WHO CCS 2010; UNICEF 2016; UNCCD 2018

¹⁰⁷ IRIN Report 93781

¹⁰⁸ WHO CCS 2010; UNICEF 2016

contaminated liquids or foods places them at a greater risk of life-threatening illnesses such as diarrhoea and pneumonia. Not having access to diverse and nutritious foods for mothers and children, proper hygiene and safe drinking water, as well as to health services are the major reasons why children in Afghanistan are malnourished¹⁰⁹.

Other natural resources that are essential for people are energy resources. Energy is essential for our daily life, is a health factor and provide a functioning society, although in Afghanistan energy is a scarce resource for the population.

From the resource dimension of poverty, it is especially important for Afghanistan to consider issues related to:

- *Safe water and improved sanitation.* The lack of access to water and sanitation is troublesome for all people and especially to the most vulnerable, it also affects the lives of poor women and children in particular. As women often bear the burden of most household work, access to clean water is a critical concern. In many areas, especially remote parts of Afghanistan, women have to walk several kilometres to collect drinking water for their families. Water scarcity can result in heavier and longer working hours to collect water, and increasing poor health.
- *Land for food and livestock.* Important to consider is who in a community and in a household that have access to land, and have property and land ownership. Securing land tenure can provide land enough for producing and processing food, provide shelter for physical and mental wellbeing and employment opportunities. People who have secure access to, and control over, environmental resources, tend to utilize the environmental resources in a more long-term sustainable way and can thus constitute agents of change. Enduring conflicts, the change in the environmental constitution, climate change, and people forced from their land and become IDPs are some of the trends and drivers that have made land for people a scarcity.
- *Nutrition and health.* Without a physical environment that provides land, water, biodiversity and climate provision for food, it is not possible to attain a nutritious and healthy life. Other resource obstacles are deprived infrastructure and transportation, prolonged drought situation in the last few years along with the long-standing effect of war on agriculture; the seasonal variation of food availability. Other factors contributing to malnutrition include: food limitations due to remoteness, seasonal variation and low food production; large families with low income; low purchasing power for quality foods due to poverty; poor health nutrition education to understand the use of balanced foods; gender discrimination in relation to food consumption. Nevertheless, basic nutritious food as a resource is a challenge as degraded land, soil degradation, and deforestation is spreading and multiplying over the country. It creates the vicious circle: Inadequate dietary diversity and insufficient amounts of food, coupled with poor hygiene, contribute to health risks and deaths.
- *Education* is a resource affecting poverty. With no basic education, lack of knowledge will persist regarding environmental issues. Hydrology, agronomy, forestry, and veterinary medicine are example of knowledge areas that are lacking and needed for people to make sustainable choices. Knowledge is needed to be able to restore, maintain and develop sustainable irrigation systems; to know that a variety of and climate adapted seeds are available; to realize what will keep livestock healthy and non-viral; to know that reforestation

¹⁰⁹ UNICEF 2018

can support essential ecosystem services and livelihood. Hence, it is important to ensure that people have knowledge, skills and have the possibility to retrieve and perceive information to benefit from the resources in a sustainable way.

- *Income generating activities* from the natural resource base such as cash crops, trees and shrubs, non-timber forest products (NTFP), animal products, minerals and how these resources are negatively impacted by degradation as well as climate change is problematic. The loss of forests can deprive people from a potential income from for example agroforestry, small-scale forestry and NTFP. Other resource challenges and barriers like infrastructure e.g. irrigation canals, roads (for access to marketplaces) etc.

Key resources such as water, energy, land, and other natural resources is regularly marked by inequality and power relations in Afghanistan with an heavy negative impact on vulnerable people.

Environmental degradation and climate change can both be a driver and a consequence of resource poverty. Poverty can be exacerbated by poor access to environmental resources, but poverty as such can also contribute to environmental degradation and climate change due to lack of opportunities and choices.

3.2 The Opportunities and Choice dimension of poverty

Being poor in terms of opportunities and choice means that people lack the possibility to use available environmental resources and ecosystem services for their own benefit to lift themselves out of poverty. Poverty in this dimension can take the form of limited access to markets, few opportunities for livelihood diversification, inability to invest in improved agricultural technology, low access to education, or barriers to change to clean energy sources.

Households that constantly live with small margins and few opportunities are vulnerable to internal and external shocks, such as droughts, floods, failed harvests, price drops on the global market, and political instability. Occurring disaster have both immediate and long-term impacts whereas direct effects include damage on properties as well as on humans, and secondary effects includes failure in agriculture production, failing in income revenues. This is especially true in Afghanistan and has made the country particularly vulnerable to disasters at the same time as the coping and adapting capacity is extremely low.

To lack opportunity and choice can also hinder people to sustainably manage available natural resources and ecosystem services in both a short- and long-term perspective. Stress over scarcity tomorrow can result in overexploitation of agricultural land and forest resources today. People with limited opportunities can also have a harder time to adapt their livelihoods to climate change and strengthen community resilience.

Linked to both the MDPA dimension of resources as well as the dimension of power is an example of what lack of opportunity and choice could look like in Afghanistan. UNICEF reported in 2018 that the ongoing drought in Afghanistan has exacerbated the practice of child marriage among drought-affected population¹¹⁰. A driver of child marriage is the loss of assets and livestock, resulting in even heavier family debts and economic pressure for the family¹¹¹.

Equity and gender equality is proven to have substantial impact on the sustainability of environment and climate change issues. Involving women in decision-making processes and promoting female participation in environmental management, for instance water or forest management could provide

¹¹⁰ UNICEF 2018

¹¹¹ UNICEF Afghanistan

positive outcomes such as women's access to and use of critical agriculture infrastructure, such as irrigation canals, storage and value chain facilities.

While women undertake a majority of the work of the agricultural workforce in Afghanistan, they account for only a small minority of land ownership. They have also less access to agricultural training and resources compared to their male counterparts, and often do not control the economic benefits of their work. Efforts aiming to reduce gender inequality could increase agricultural profits and yields e.g. through gender sensitive agriculture trainings, facilitating women's access to information and communications technologies (ICTs), and improved access to electricity and water.

The ongoing drought in Afghanistan has caused major loss to the rural communities, including health status, death of livestock, and has forced people to move toward makeshift camps and cities, to avoid famine¹¹². Kabul province stands out as the main gravitational centre for migrants in the country, both for those who move internally and for those returning from abroad. This diminishes the opportunities and choices people may have and brings heavy load on a necessary but already insufficient infrastructure.

Provision of opportunities and choices can be limited by unfair and corrupt governance, but it can also be restricted by lack of knowledge and information in several levels of society. Inadequate information about how environmental degradation and climate change affect communities' health and wellbeing can sometime explain use of illegal pesticides, burning of waste, deshrubification etc. In Afghanistan, both an unfair and corrupt governance, as well as lack of knowledge and information are vital challenges for a sustainable development. The previous and ongoing conflicts add to these challenges as the legitimate power is not having control over the country.

A strive to create a better life is universal and people living in poverty should not only be seen as victims of environmental degradation but also as agents of change. The change agents can maintain and conserve the environment once given the opportunity to do so. Having opportunities and choice, for example access to solar energy could increase the availability of affordable and green technologies. A solar system would provide light and power which creates better opportunities for indoor light and air, for heating and cooling, and for pumping of water for irrigation. For instance access to a diversity of livelihood opportunities instead of depending on one only, is essential for strengthening resilience and to increase people's freedom to shape their own lives and make them more resilient to changes and shocks.

3.3 Power and Voice

Poverty in this dimension is linked to a lack of power over natural resource use or inadequate voice regarding decisions related to the environment.

Being poor in terms of power and voice means that people lack the ability to articulate their concerns, needs and rights in an informed and meaningful way, and to take part in decision-making affecting these concerns. Power and voice will ensure that people's knowledge and concerns are listened to and understood.

Human rights principles and governance – how decisions are made and power exercised – have a strong effect on environmental actions and outcomes. Achieving a sustainable management of the environment is a complex task and many perspectives needs to be taken into consideration. For most people in Afghanistan, the ability and opportunity to claim and enjoy human rights are hard. Political uncertainty, corruption, and security challenges remain in Afghanistan, and the rule of law remains

¹¹² Reliefweb: Drought and Food Insecurity (ERCC)

fragile and uneven across the country which heavily affect the utilisation of natural resources of the country.

Power and voice is often related to access to information, ability to participate and hold duty bearers accountable. To strengthen power and voice could be to secure representation in local, national and international forums where decisions on climate change, natural resource use, biodiversity, the allocation of water resources and other types of issues that have a large impact on people's life and well-being, are discussed.

All people should have the possibility to participate meaningfully in public consultations, planning and political processes that affect their environment and livelihood opportunities without being discriminated¹¹³. The reality of who has the right to use their power and voice in Afghanistan differ substantially. A study on Afghanistan's commitments to women and gender equality¹¹⁴ reports that although small steps have taken to facilitate the involvement of women in decision-making on resources and services, e.g. more efforts are needed in Afghanistan to move from women's representation to participation in decision-making.

Access to land and natural resources is also about access to power. People without power to influence their access and use of natural resources will not prevail poverty. The unequal access to power remains also due to inequality. District officials, insurgents, warlords, and drug traffickers comprise an illegal regime with power over men, women, boys and girls that encompass the afghan population.

3.4 The Human Security dimension of poverty

Being poor in terms of human security, describes how violence and insecurity constrains a person's or community's ability to move out of poverty.

Afghanistan has for decades been considered one of the most dangerous and crisis-ridden countries in the world. The number of IDPs in Afghanistan due to the concurrent conflicts is currently estimated to at least 1.3 million people¹¹⁵. Reports confirm that IDPs mostly live in informal settlements, where they lack access to e.g. food, safe water, sanitation, and healthcare.

Resource scarcity can create tension in the home and heighten the possibility of domestic violence. In humanitarian settings, the impact of hunger and food insecurity can lead people to adopt strategies that negatively impact their well-being and increase the risk of sexual assault and sexual exploitation. In addition, household tensions around food can contribute to forms of domestic violence. Exposure to exploitation and violence, in turn, can heighten food insecurity by undermining the physical and psychosocial well-being of survivors.¹¹⁶

From the human security dimension of poverty, it is especially important for Afghanistan to consider issues related to

- *Competition over resources.* Afghanistan faces extreme food insecurity and a major driver of this is conflict and displacement. The ongoing climate change i.e. drought also impacts conflict and migration as the battle over land, forest and water increases.

¹¹³ UN Special Rapporteur on human rights and the environment

¹¹⁴ Reliefweb: The Afghanistan Gender Equality Report Card

¹¹⁵ iDMC

¹¹⁶ GBV Guidelines

The competition over natural resources, such as land, water, food and fodder, is a cause for concern, as it can create insecurity for people that already have limited resources, few opportunities and a restricted voice. Conflicts over natural resources can result in increased internal and international migration when people leave their land and communities to move elsewhere to find a decent livelihood and safer environment. Conflicts, related to the scarcity of natural resources, may be triggered by climate related events and/or worsen with environment degradation.

- *Vulnerabilities to tensions, conflict and lawlessness.* A human security issue from a political perspective is that land tenure and resource property rights in Afghanistan are not clear. Successive Governments have overlain new land policies and legislation over previous ones, blurring the lines between private, common and state land, and giving rise to the possibility of multiple and conflicting entitlements¹¹⁷. These frequent legislative changes, together with partial implementation, a general lack of respect for rule of law in rural areas, intermittent conflict, displacement and drought have all exacerbated the environmental condition. This situation has numerous negative implications for sustainable natural resource management. Common property natural resources such as rangelands and forests are frequently subjected to a 'Tragedy of the Commons' type situation, where unclear ownership and use rights generate incentives that stimulate unsustainable exploitation, leading to additional degradation of the resource and associated biodiversity.
- *Disasters.* In many situations, vulnerable people especially women and girls are disproportionately affected by disasters, despite being natural or man-made. Vulnerable people with less resources, choices and voice have less active and coping capacity. Women as primary caregivers, who often have greater responsibilities related to household work and agriculture and food production, may have even less access to resources for recovery. They may also be required to take on new household responsibilities (e.g. when primary income earners have been killed or injured, or need to leave their families to find employment).
- *Physical and sexual safety and violence.* As scarcity of environmental resources remain and develop, people may be forced to leave their home and village to find another source of living in urban areas or to find support in campsites, and as people are crowded in smaller space, tension develops, violence will grow and human security is heavily affected. Scarcity of resources such as water, land and clean air will aggravate.

Prevention of GBV in IDP settings could combine immediate preventive actions such as sufficient lighting in refugee camps, separate and safe sanitation, with more long-term prevention strategies that seek to change unequal power relations through access to education, and community awareness of ambient environment.

The environmental situation in long term and climate change consequences in short term are in the midst of conflict and peace for Afghanistan. In long term, subsistence and nutritional situation and in short term, the drought conditions are contributing to the humanitarian needs and most vulnerable households e.g. that are dependent on rain-fed wheat production, that will expect to face difficulty in meeting their subsistence requirements¹¹⁸.

¹¹⁷ NAPA 2009

¹¹⁸ The Telegraph 2018; FAO 2018

4. Policy and strategic framework for managing environmental challenges and climate change

4.1 Brief overview of the institutional framework for environment and climate issues

4.1.1 National Environmental Protection Agency

The National Environmental Protection Agency (NEPA), established in 2005, is the main government agency related to environmental protection.

NEPA is according to the Environmental Law of Afghanistan (ELA) responsible for environmental issues of national relevance, at both the central and provincial levels. In short, the role of NEPA is to regulate, coordinate, monitor and enforce the environmental law to protect national interests and benefit all citizens of Afghanistan.¹¹⁹

As in many other developing countries NEPA is primarily a policy making body with limited executive power or budget, which has little power to demand changes that may be needed due to environmental factors¹²⁰. However there are also specific obstacles that are Afghanistan specific. First, NEPA was established and constructed as an agency that made it legally and customary less powerful than a ministry, (in contradiction to Ministry of Agriculture, Irrigation and Livestock (MAIL) a ministry with responsibility for green issues like protected areas management, species trade, rangelands, and forests). Second, there was no legality for an agency outside the city of Kabul and therefore NEPA had no authority outside the capital and environmental issues were not possible to be concerned by NEPA. Third, the agency was built from scratch and there was no basis for it in the Afghan legal system.¹²¹ Today, according to the EU country profile, NEPA employs over 850 staff and is active in all 34 provinces across Afghanistan and shares the responsibility of environmental issues with other ministries.¹²²

4.1.2 Environmental Law of Afghanistan

The Environmental Law of Afghanistan (ELA), drafted by the international community with input from Government of Afghanistan (GoA), was passed by the National Assembly in 2007. The Environment Law became the first piece of legislation passed under the new interim government after the fall of the Taliban and was crafted as a model of best practice. According to UN Environment¹²³, the Environment Law 'provides a foundation on which other laws can be built, and is one of the UNEP programmes' most visible and lasting legacies'¹²⁴, although the ownership of the law has been questioned. During the ratification process the ELA experienced significant content drift and furthermore, the content and meaning of the ELA was reframed when translated and adapted to the national context¹²⁵.

An Environmental Law should provide the general public rights to access environmental information, participate in environmental decisions-making, and access to environmental justice.¹²⁶ Also customary law, which often in Afghanistan is applied in relation to access to and use of land and the

¹¹⁹ Environment Act, Islamic Republic of Afghanistan 2005

¹²⁰ EU Country Profile 2017; Johnson 2017

¹²¹ Johnson 2017

¹²² EU Country Profile 2017

¹²³ UN Environment and UNEP is used interchangeably as all work in Afghanistan referred to in this paper was done under the name UNEP.

¹²⁴ UNEP/NEPA 2007

¹²⁵ Johnson 2017

¹²⁶ NEPA 2015

natural resources on it, is constitutional. However, in Afghanistan, ELA being statutory law shall be applied as long as it does not conflict with Sharia law or customary, also being statutory.

4.1.3 Other key environmental governmental bodies and implementation of law

Ministry of Agriculture, Irrigation and Livestock (MAIL) with the responsibility to support farmers, manage natural resources, manage water resources, and strengthen agricultural economics, is of significant importance, not the least since agriculture is a major source to livelihood.

Other important governmental bodies are; Ministry of Energy and Water (MEW), and Ministry of Mines and Petroleum (MoMP). Other governmental directorates important for environmental and climate issues are Afghanistan Independent Land Authority (ARAZI), and Afghanistan National Disaster Management Authority (ANDMA)/Office of State Minister for Disaster Management (DNDM), Ministry of Rural Rehabilitation and Development (MRRD) and Ministry of Urban Development and Housing (MUDH).

It is difficult to verify the correct responsibilities for each governmental body, there are major duplications and overlaps of duties between and parallel systems within institutions, and in connection to international programming in the country. For example quality control of food and other imported commodities are the responsibility of four ministries without clear division of responsibilities¹²⁷. Further, development programmes are implemented through contracted staff rather than civil servants, which creates multiple layers of organisations and parallel executive structures with staff aligned to international community and not accountable to ministries and governmental bodies¹²⁸.

Furthermore, a major challenge for GoA and ministries to implement formal law is the insecure political and judiciary context in Afghanistan. Enacted in 2009, the Water Law states that all the water of the country belongs to its people and that the use is free¹²⁹. A UN study found that the Water Law comprises a detailed regulatory scheme, however there are several concerns. In the rural areas farmers prefer to depend on the tribal/customary laws, which are administered through local village water masters (Mirab's) who still command a great deal of respect.¹³⁰ Further, the Civil Code states that water from rivers and their tributaries are 'public property' as long as the usage is not 'contrary to public interests or special laws' however there is no clarification to what is 'contrary to public interests'. Parallel systems, that even may contradict each other, are also fueling historic or new disputes over water access, especially as scarcity appears. The Mirab system depend upon an ancient system of customary law that may be more functional than formal systems, however it lacks codification, transparency, enforcement mechanisms, and formal review. Attempting to implement a more centralised/formal system of water management without including Mirab's could cause significant disruption, especially in the provinces.

4.1.4 EIA regulations under the ELA

The Environmental Impact Assessment (EIA) concept has been introduced in Afghanistan through the Environment Law, and ELA builds the framework for EIA¹³¹ excluding the Strategic Environmental

¹²⁷ MAIL, Ministry of Commerce and Industry (MoCI), Afghanistan National Standard Authority (ANSA), Ministry of Public Health (MoPH)

¹²⁸ Koetz 2017

¹²⁹ Water Law of Afghanistan 2009

¹³⁰ UNAMA 2016

¹³¹ Environment Act, Islamic Republic of Afghanistan 2005; NCEA 2015

Assessment (SEA) concept. NEPA is the central authority for following up and monitoring EIAs and NEPA is in theory responsible for reviewing environmental assessments. But ELA lacks the necessary equipment and capacity to enforce regulatory standards. The national EIA regulation which outline the framework for EIA include¹³²:

- The National Environmental Impact Assessment Policy (2007);
- The Administrative Guidelines for the Preparation of Environmental Impact Assessments (2008);
- The Environmental Impact Assessment Regulations (2008);

It is unclear how many EIAs that have been undertaken until now. Those found are conducted by multinational and multilateral organisations¹³³.

A comprehensive review of the regularly practices of the environmental and social legislation was done for extractive industries in 2013 and the conclusion was 'that the Environment Law and the EIA Regulations, while attempting to match international best practice at least in some respects, fail to achieve this objective. The parent Law is weak and confusing in relation to the overall process, the 'comprehensive mitigation plan' interfering with the EIA provisions and process. There can be no debate that the Environment Law needs thorough redrafting, to radically improve its overall quality and to encompass social issues (on which the current version is silent). The EIA Regulations also require redrafting, to 'tighten' the provisions as a whole and to better reflect international best practice'¹³⁴.

4.2 Mainstreaming of environment and climate change in the legal framework

As a post-conflict country, Afghanistan lacks a comprehensive framework for enabling laws that facilitate the implementation of a consolidate approach to national environmental management and compliance with the Rio Conventions. Furthermore, desertification, drought, biodiversity conservation and climate change are rarely considered even comprehensively during the processes of elaborating rural development plans, sector policies, investment plans and national legislation. Weak coordination leads to diverging approaches that can generate conflicts in natural resource management.¹³⁵

Climate nor climate change is not explicitly mentioned in the ELA. Climate and climate change is neither present in the 2008 version of Afghanistan National Development Strategy (ANDS). However, in ELA and drafts of other legislative documents¹³⁶ it is possible to find relevant information concerning climate change. In the Afghanistan National Peace Development Framework (NPDF) 2017-2021 climate change mitigation is mentioned¹³⁷. Afghanistan completed its National Adaptation Programme of Action for Climate Change (NAPA) and National Capacity Needs Self-Assessment for Global Environmental Management in 2009¹³⁸. Also, its Initial National Communication (INC) under the UNFCCC was submitted in 2016¹³⁹.

In preparing the INC report, a National Climate Change Committee was created involving all key stakeholders to guide the INC procedures. Involvement of stakeholders in the inception workshop,

¹³² EU Country Profile 2017; Johnson 2017

¹³³ WB, ADB, UNOCHA

¹³⁴ Adam Smith International 2013; EITI REPORT 2017; EITI 2017; NEPA 2015

¹³⁵ NAPA 2009

¹³⁶ Water law, Air Pollution law, Rangeland law, Forest law and Medicinal Plants law

¹³⁷ ANPDF 2017

¹³⁸ NAPA 2009

¹³⁹ INC/UNFCCC 2015

different study teams and participation in the consultation meetings on discussion on thematic issues of INC has helped to initiate a number of initiatives to promote education and awareness about climate change related issues in Afghanistan. NEPA with technical support from UNEP has developed a draft Environmental Education, Training and Awareness Strategy for Afghanistan. A separate Department of Environmental Protection and Disaster Management in Kabul University with Strategic Development Plan of the department and initiation of private universities to run bachelor's and master's program on environmental engineering fields will generate more capacity in Afghanistan in coming years.¹⁴⁰

There is generally low awareness about environmental issues among citizens.¹⁴¹ The government lacks the capacity to realize the importance of different environmental issues. Ignorance and lack of understanding of this vital issue has a negative impact on the whole nation. Environmental sustainability and protection will directly depend on strong leadership, sustainable management and continued follow up. This is not in place.

According to NEPA there has however been an increased interest in environmental issues in Afghan media¹⁴² with potential to raise general awareness regarding environmental issues in the country. Many donor-supported programmes have education and awareness components. This has helped to raise the level of understanding on environmental issues including climate change. However, more effort is needed to include environment and climate change in curricula from primary school to higher education. Universities need support to develop special courses on environmental aspects. To mainstream environmental issues and to develop national and sectorial policies is vital. Demonstration of community based adaptation and renewable energy projects; appropriate trainings and materials to mass media; and training to religious leaders on environmental and climate change issues, all need to be given priority.

4.3 National Climate Change Mitigation and Adaptation Policies and Plans

There is no overall regulatory framework specifically addressing climate mitigation or adaptation, nor climate change, although other related legislation is relevant, including the NAPA, Environment Law, Environmental Impact Assessment (EIA) regulations, draft regulations for protected areas and related policies and strategies.

At present, GoA does not have a National Strategy on Climate Change including a mitigation strategy. Neither has it done any detailed mitigation assessment of various available opportunities¹⁴³. In order to better understand how climate change impact different parts of the country efforts will be made to improve the accuracy of regional climate models.

The expectations on Afghanistan are not so much about substantially reducing GHG as this is neither realistic nor fair considering the poverty situation and the comparatively low level of development in the country. The challenge is more about ensuring that investments leading to increased GHG emissions is benefiting the poor who are the most vulnerable to the effect of climate change.¹⁴⁴

Despite the absence of a national strategy on climate change GoA has submitted an Intended Nationally Determined Contribution (INDC) to the UNFCCC. The report concludes that Afghanistan

¹⁴⁰ NEPA 2015

¹⁴¹ Hashmat 2015

¹⁴² NEPA 2015

¹⁴³ INC/UNFCCC 2015

¹⁴⁴ Thomas 2016

can 'remain a low emission economy while developing rapidly if, under the Paris Climate Change Agreement, extensive financial and other resources are made available to Afghanistan to successfully develop and implement low emission development strategies and highly effective adaptation and development strategies'. Afghanistan is committed to limit its GHG emissions to 42.7 metric tons of coal equivalent (excluding emissions from Land Use changes and Forestry) by 2030, if it is provided a \$ 17.4 billion as financial support.¹⁴⁵

As mentioned earlier, climate change is not mentioned regularly in Afghanistan's official documents and even less is adaptation. All the same, aspects of climate change adaptation is present in some development cooperation activities provided by e.g. UNDP, FAO and WCS.

Afghanistan is not short of policy documents that could provide a framework to tackle issues related to climate change, even though a national development strategy on climate change is missing. What is very challenging is an overall lack of capacity that limits progress when it comes to the actual application of the policies and implementation of plans.¹⁴⁶

Furthermore, a major constraint regarding climate mitigation and adaptation is the overall unavailability of relevant data. The poor quality and organisation of data is a major constraint for analysis of biophysical processes of climate change and for cost/benefit analysis of adaptation and modelling projects and policies. Moreover, more research is needed to understand the dynamics of desertification and land degradation. Presently there is only a surface understanding of the levels of vulnerability and consequences in highly fragile arid and hyper-arid rangeland ecosystems in Afghanistan.

There is an urgent need to enhance the capacity of government and national experts and make them engage with wider regional planning and development bodies to ensure that the best practice climate change assessments, adaptation approaches and low carbon development strategies developed elsewhere in Central and South Asia can be applied in Afghanistan¹⁴⁷.

There are four universities in Kabul¹⁴⁸ and nine regional universities¹⁴⁹. They have a critical role to play with respect to capacity development (education as well as research). Current courses offered at Afghan Universities provide only Bachelor level training. Demand greatly exceeds capacity. Support is needed for curricula development, as well as developing the quality and capacity of ongoing education.¹⁵⁰

¹⁴⁵ EU Country Profile 2017

¹⁴⁶ Thomas 2016

¹⁴⁷ NEPA 2011

¹⁴⁸ Medical, Kabul University, Polytechnic, and Education

¹⁴⁹ Nangarhar, Khost, Kandahar, Herat, Bamiyan, Mazar, Takhar, Badakhshan and Kapisa

¹⁵⁰ NAPA 2015

Annex 1 Brief overview of main international actors

The country is highly dependent on foreign aid. Many international actors are involved in Afghanistan and have been since years. The listed actors below are chosen based on their present activities¹⁵¹ in Afghanistan. Not all have a focus on environmental and climate change issues. But there might be a potential to identify opportunities and/or possibilities to cooperate, liaise and explore synergies to support the challenges regarding environmental issues and climate change aspects. The list is as such by far comprehensive.

Multilateral actors

Asian Development Bank

ADB is supporting Afghanistan's national development strategies (ANDS) and priority programmes through establishing a stronger foundation for economic growth and poverty reduction. ADB is the leading development partner in infrastructure. The two major areas of support are: 1) infrastructural development with focus on transport and energy, and; 2) agriculture with focus on natural resources and rural development. The projects include the purpose to increase agricultural productivity, improve rural livelihoods, reduce postharvest losses, and enhance water resources management, especially for irrigation and agricultural infrastructure and irrigated land have been rehabilitated and upgraded.¹⁵²

The Afghanistan Infrastructure Trust Fund (AITF)¹⁵³ focuses on core infrastructure projects co-financed and screened by ADB. Eligible investments include roads, railways, airports, energy (generation, transmission, and distribution), water management and irrigation.

Other smaller projects with the opportunity of scaling up is "Enhanced Agricultural Value Chains for Sustainable Livelihoods projects", where for example improved storage structures has been the input. Appropriate storage facilities have enabled farmers (potato, vegetable, oilseed producers) to sell their produce in the offseason for up to triple the price¹⁵⁴.

In the area of horticulture ADB supports a project that will contribute to increasing the supply of fresh and processed fruit and vegetables, and expanding exports of high-value fruit, vegetables, and nuts. The contribution includes improving the processing efficiency and marketing capacity of domestic agro-business enterprises and modernizing crop production through better planting material, modern greenhouses, and on-farm facilities.¹⁵⁵

EU – European Union

EU-FAO partnership develop early warning action against food crisis and promote resilience. The support to improve analysis, information sharing and monitoring of food and nutrition factors should ensure that diverse actors involved are better prepared to withstand potential food crises. Thus increasing the resilience of vulnerable populations, reducing their food insecurity and malnutrition.

FAO – Food and Agriculture Organisation of the United Nations

FAO sets out six specific strategic pillars of technical expertise to guide FAO partnership with and support to Afghanistan.

¹⁵¹ Activities like; target whole sector (agriculture) or specific target (food security) or environmentally linked issues like human rights and/or vulnerable people.

¹⁵² ADB Factsheet 2018

¹⁵³ ADB <https://www.adb.org/sites/default/files/institutional-document/33368/files/aitf.pdf>

¹⁵⁴ Afghanistan: A Simple Solution for Farmers 2016

¹⁵⁵ Afghanistan: Horticulture Value Chain Development Sector Project 2018

- Better governance through improved capacity for policy planning, land reform and decentralization, for effective agricultural management.
- Improved natural common resource management, through sustainable environmental management.
- Fostering expansion of irrigation and field water management.
- Fostering productive agriculture for surplus commercialization, value chain development, and job creation.
- Supporting vulnerable farmers for improved food & nutrition security, resilience, and emergency response to natural and man-made disasters and climate change.
- Capacity development for emergency management and enhanced institutional capacities.¹⁵⁶

For example, FAO supports rural families to improve their food security through distribution of agriculture inputs such as certified seed and fertilizers and home gardening tools. They will also receive training on improved agriculture practices and ways to prepare for, and mitigate the effects of, climate and weather-related disasters.

Further, improved stoves are sold or distributed by FAO. The cook stoves being affordable and will reduce the adverse environmental effects since less wood or other combustibles are needed. This is a mitigation action but also serves as adaptation since maintained or increased biomass cover will enhance ecosystems services.

GEF – Global Environmental Fund (-LDCF Least Developed Countries Fund)

With its international partnership of 183 countries, international institutions, civil society organisations and the private sector that addresses global environmental issues, GEF is an important actor in Afghanistan.

ADB, FAO, UNDP, and UNEP are the GEF agencies working in Afghanistan. In Afghanistan several programmes in the areas of water, biodiversity, and climate change and disaster risk are being implemented through GEF-LDCF.

The ‘Adapting Afghan Communities to Climate-Induced Disaster Risks’ project will improve the preparedness and resilience of selected Afghan communities. The contribution includes improvements of decisions and implementation of climate-induced disaster risk measures, through deploying and effectively utilising community-based early warning systems, support climate-resilient livelihood strategies and strengthening institutional capacities to integrate climate risks and opportunities into national and provincial plans, budgets and policies.¹⁵⁷

UNDPs ‘Climate Change Adaptation project’ has built new infrastructure such as water intakes, repaired irrigation canals, and protected farmlands from flash floods.

IOM – International Organization for Migration

IOM is increasingly focusing on technical cooperation and capacity building of Afghan government institutions in migration management throughout all programme areas. IOM also provides emergency relief to vulnerable displaced families; facilitates long-term return and reintegration to and within Afghanistan and stabilizes migrant communities for sustainable development in the context of long periods of mass population displacement.¹⁵⁸

¹⁵⁶ FAO 2018

¹⁵⁷ <https://www.adaptation-undp.org/projects/adapting-afghan-communities-climate-induced-disaster-risks>

¹⁵⁸ CCOE 2014

IOM does not work in the field of environment and climate change, however migration is and will continue to highly affect the situation in Afghanistan as a whole, hence is an important partner in relation to natural resources, and a sustainable livelihood.

UNAMA – United Nations Assistance Mission in Afghanistan

UNAMA's mission is to support the people and government of Afghanistan in achieving peace and stability. Its main tasks in Afghanistan are: to strengthen cooperation with ISAF, provide political outreach, provide good offices in support of Afghan-led reconciliation programmes and support efforts to improve governance, the rule of law and to combat corruption.¹⁵⁹

UNAMA does not directly work with environment nor with climate change however there are strong links to ditto issues in their efforts regarding human rights.

UNAMA work with support to inclusive participation in processes that promote a just peace and reconciliation include working with broader Afghan civil society to strengthen their understanding of and effective participation in major political dialogues, to involve in decisions regarding their local environment, and in the peace, reconciliation and reintegration processes.

UNDP – United Nations Development Programme

UNDP support the consolidation of democracy through building national institutions, promoting accountability and transparency and promoting civil society empowerment - particularly focusing on youth and women. In support of the promotion of rights and equality, UNDP implements activities related to justice, human rights, gender and disability.

UNDP's core services to support national processes of democratic transitions focus on: 1) Policy advice and technical support; 2) Strengthening capacity of institutions and individuals; 3) Advocacy, communications, and public information; 4) Promoting and brokering dialogue; and 5) Knowledge networking and sharing of good practices.¹⁶⁰

UNDP together with GoA and GEF-LDCF in 2017 launched a multi-million dollar initiative to prepare rural communities for climate change. The programme will continue until 2021 and MAIL is lead implementer. The focus is on four areas: enhancing gender-sensitive disaster risk reduction in, and by, vulnerable communities; establishing community-based early warning systems; promoting climate-resilient agricultural practices and livelihoods; and working with national, provincial and district-level government institutions to better integrate climate change into planning.¹⁶¹

UNDP together with FAO supports irrigation development to support food security and also for curbing effects of, and adaptation to, changing water availability due to climate change. To improve irrigation infrastructure small-scale reservoirs are built along selected rivers and water harvesting techniques are introduced. Traditional (Qanat/Karezes) and canal systems are rehabilitated to reduce water losses and enhance agricultural productivity. Local level water retention and utilization capacity is improved by building community-based check dams, contour bunds and other infrastructure to conserve water and enhance groundwater recharge.

UN Environment (UNEP – United Nations Environmental Programme)

UN Environment's Afghanistan programme focuses on building environmental resilience and sustainability throughout the country through:

¹⁵⁹ CCOE 2014

¹⁶⁰ UNDP 2018

¹⁶¹ UNDP 2019

- Strengthening environmental governance and building institutions.
- Providing technical assistance in fulfilling the administrative obligations of each ratified convention.
- Putting in place robust knowledge management and environmental outreach activities.
- Developing community-based natural resources management.
- Preserving country's diverse landscape.
- Climate change.¹⁶²

Afghanistan is becoming the dumping ground of unwanted goods from around the world. The influx of used cars and second-hand home appliances, such as refrigerators and air conditioning units, and inferior medical supplies, is a post war effect, and has already and will leave a harmful mark on the environment.¹⁶³ Examples to support Afghanistan in order to conserve, preserve and sustain the environment UNEP is assisting Afghanistan's National Environmental Protection Agency (NEPA) and the Ministry of Agriculture, Irrigation and Livestock (MAIL) in the implementation of multilateral and regional environmental agreements through training and technical support in project proposal development, legal harmonization, and reporting. UNEP also continues to generate new information on key environmental issues in the country through technical reports such as the State of the Environment Report as well as through training.

UNOCHA – United Nations Office for Coordination of Humanitarian Affairs

Although OCHA has a humanitarian mission the potential to include ecological resilience and sustainability in their focus areas is significant. OCHA works on four core functions in Afghanistan; 1) alleviate human suffering; 2) promotion of preparedness and prevention efforts to reduce future vulnerability to natural disasters; 3) advocating for the rights of people in need; and 4) facilitating sustainable solutions to address root causes.¹⁶⁴

UNODC – United Nations Office on Drugs and Crime

The programme is important as it in its focus areas has the possibility to aim for a limitation of the poppy cultivation. The country programme is based on an integrated programme approach and aims at delivering outcomes and outputs through sub-programmes rather than through standalone projects and initiatives. The integrated approach mirrors the complexity of the drug and crime related challenges in Afghanistan and focuses on four sub-programmes: 1) Law Enforcement; 2) Criminal Justice; 3) Health and Alternative Development; 4) Advocacy, Policy and Research.¹⁶⁵

The country programme is also strongly linked to the regional programme for Afghanistan and neighbouring countries as well as a global programmes allowing UNODC to assist governments to tackle drugs and crime related challenges in the regional and international contexts.

WB – World Bank

WB engagement supports the Afghanistan National Peace and Development Framework (ANPDF). Advisory work and operations focus on macro-fiscal policy and management; finance, private investments and jobs creation; public sector governance and anti-corruption; human capital

¹⁶² UNEP 2018

¹⁶³ UNEP 2017

¹⁶⁴ CCOE 2014

¹⁶⁵ UNODC 2018: <http://www.unodc.org/afghanistan/en/country-programme.html>

development and service delivery; citizen engagement and social inclusion, urban development; and infrastructure, connectivity and sustainability.¹⁶⁶

The engagement in sustainability includes the infrastructure of irrigation e.g. the rehabilitation of irrigation systems; design of small multi-purpose dams. Furthermore, support is provided to MAIL to establish a wheat reserve to prevent the country from a more severe emergency situation.

The Afghanistan Reconstruction Trust Fund (ARTF), was established in 2002 to provide a coordinated financing mechanism for GoA's budget and national investment projects. Administered by the WB it is the most important instrument for the international community for financing reconstruction and development within Afghanistan.

ARTF include several sectors comprising rural development, agriculture, and infrastructure with a number of projects in the area of environment such as: support to improved crop production technologies, and strengthening the institutional capacity of MAIL; support to improved agricultural productivity through enhancing the efficiency of water use by establishing irrigation associations; support to promote the adoption of improved production and post-harvest practiced and technologies in horticulture and livestock sector.¹⁶⁷

WFP – World Food Programme

WFP focuses on five areas of which all are direct or indirect linked to environmental issues:

- To improve employment opportunities in urban areas; WFP provides food insecure people, and especially women and unemployed young men, with training to acquire new, marketable skills and improve literacy so they can earn a better living. Training areas include handicraft making, carpentry, plumbing and others.
- Under its disaster risk reduction activities, WFP continues to help build resilience at the community level by supporting the construction or rehabilitation of key infrastructure, including roads, canals, flood protection walls and terracing. In 2016, more than 500,000 people received WFP food assistance through its assets creation activities.
- WFP fights undernutrition in vulnerable children under 5, pregnant women and new mothers, helping to prevent the lifelong consequences of poor nutrition in the critical early years of life. In 2015, WFP reached over 814,000 vulnerable women and children with take-home food baskets, essential micronutrient tablets and specialized nutritious food.
- WFP helps local farmers boost production and processing capacities, as well as access to markets.
- WFP also works with the Ministry of Health to establish food quality and safety standards and supports national flour fortification programmes, including by providing micronutrients for private millers and training to fortify flour for commercial sale.¹⁶⁸

WFP has been working in Afghanistan since 1963, helping to tackle the country's nutritional, educational and environmental problems, and supporting vulnerable people to improve their livelihoods. Active in all 34 provinces, WFP has shifted its focus in recent years from emergency assistance to rehabilitation and recovery.

Bilateral actors

DANIDA

¹⁶⁶ WB Country Update 053

¹⁶⁷ WB Country Update 053 2018; ARTF result matrix January-December 2017

¹⁶⁸ WFP 2018

Denmark contributes by supporting democracy and human rights, education and economic development. Additionally, Denmark provides emergency relief and co-financing of Danish civil society organisations working in the country. The overall Danish development budget for Afghanistan is approximately USD 100 million a year.

Support to improving living conditions is part of the overall Danish effort to support ‘the growth of a stable and more developed Afghanistan that can take charge of its own security, continue its democratic development and promote respect for human rights’.

Support is being provided within three components. Under Rural Development, funding is provided to ongoing government development programmes which provides block grants nation-wide directly to Afghan villages and establishes democratically elected community development councils to administer the grants and other development activities. Funding also addresses social and economic development problems at district level; and to small enterprises in rural areas, as well as promoting the use of alternative crops in Helmand province to counter-narcotics activities. Danida works closely with UNDP, UNHCR and others.

DFID

DFID support states that the long term purpose is to build a more stable Afghanistan that is less dependent on external support. UK is the second largest humanitarian donor in Afghanistan and approximately 24% of the total financial support is humanitarian. In the area of environment and climate support is provided in safe drinking water.¹⁶⁹

Over 50% of DFID's annual bilateral spend is through the Afghanistan Reconstruction Trust Fund. This pools funding from 15 donors and is believed to reduce risk, providing donors with a common system for addressing fraud and corruption, and monitoring results.¹⁷⁰

GIZ

The German and Afghan governments have agreed to focus on the following priority areas:

- Good governance
- Sustainable economic development (incl. Technical/Vocational Education and Training)
- Urban development and sustainable infrastructure (incl. Energy and Water)
- Other areas of cooperation (incl. Education, Monitoring and Evaluation, Communication)
- Rural development, security and reconstruction

Prosperous, stable and resilient rural communities are created through the promotion of sustainable economic growth and employment in rural areas. In this regard GIZ believes, sustainable licit agricultural production in both quantitative and qualitative terms is improved and value-addition for agricultural products is promoted.

Despite numerous international support initiatives, lack of a sustainable access to quality resource inputs and services remains a serious bottleneck for Afghan farmers. The country often fails to use its available water resources properly, and there are currently no measures in place to conserve them. Although Afghanistan has begun to restructure its water sector, the conservation goals have not yet been achieved. Sustainable water and sanitation systems have been developed in the towns and cities, and the frameworks needed to support them are in place.¹⁷¹

¹⁶⁹ DFID

¹⁷⁰ DFID 2018

¹⁷¹ GIZ <https://www.giz.de/en/worldwide/14701.html>

Major NGOs active in Afghanistan

ACTED - Agency for Technical Cooperation and Development

The focus for ACTED in Afghanistan are to: improve infrastructure, provide a more enabling environment for women with accessible facilities and home-based services to increase the levels of participation, ongoing commitment to accountability, partnerships and coordination as an active contributor to humanitarian reform.

CARE Afghanistan

CARE has worked in Afghanistan since 1961. Care is represented in in the central, southern, and southeastern regions with focus on education, water and sanitation, food for war widows, and income generation and skills training for vulnerable groups and demobilized soldiers.

DACAAR – Danish Committee for Aid to Afghan Refugees

Since 1984, the Danish Committee for Aid to Afghan Refugees has worked toward sustainable livelihoods for rural Afghans, including support to refugees and returnees, with a focus on rural development initiatives and water and sanitation projects. Its work covers 25 of Afghanistan's 34 provinces.

DACAAR runs a comprehensive drinking water and sanitation programme along with rural development activities. The experience from DACAAR's work has contributed directly to government policies, particularly in the field of drinking water and sanitation.

Mercy Corps

Mercy Corps is engaged in the environmental sector: agricultural development through increasing farmers' production through training, infrastructure improvement and links to local and global markets; addressing natural resource depletion by educating farmers and government officials about sustainable water management, livestock care, soil conservation, forest and pasture management; installing solar systems in community spaces to support economic growth and better access to social services.¹⁷²

SAK – Swedish Afghanistan Committee

SAK has been in Afghanistan continuously for more than 35 years now. The organisation is concentrated on the most vulnerable groups in Afghanistan. They have four focus areas: health care; community governance; rural livelihood; and education.¹⁷³

AREU – the Afghanistan Research and Evaluation Unit

AREU is an independent research institute based in Kabul that was established in 2002 by the assistance of the international community. AREU's mission is to inform and influence policy and practice by conducting high-quality, policy-relevant, evidence-based research and actively

¹⁷² Mercy Corps

¹⁷³ SAK

disseminating the results and promote a culture of research and learning. AREU achieves its mission by engaging with policy makers, civil society, researchers and academics to promote their use of AREU's research-based publications and its library, strengthening their research capacity and creating opportunities for analysis, reflection and debate.

AREU designs its research program to reflect changing circumstances and priorities. The current five research thematic areas guiding the research agenda according to strategic direction are as follows: Natural Resource Management; Governance and Political Economy; Gender; Constitutional Law; Social Protection and Livelihoods.

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Annex 3 Population of Afghanistan

There is a high degree of uncertainty regarding the total population of Afghanistan. This annex wants to underline the fact that high uncertainties regarding population should be considered when planning and programming is done, both from the perspective that there are reservations how many people that are living in a selected area, and that the population group is of young age.

The only official Afghan census ever conducted was in 1979, and it was incomplete¹⁷⁴. With the end of the Taliban regime 2001, there was an urgent need to obtain better statistics and efforts were made prior the election in 2005, however it failed. There was a plan to conduct a full-fledged population census in 2010 by Central Statistic Organization with the assistance of UNFPA, however it has not been finished¹⁷⁵. Therefore, the size and demography of the population in Afghanistan will continue to be made on estimations and on indicative statistics.

In 2011, the total population was an estimated 32.3 million inhabitants.

In 2013, Afghanistan was estimated having a population of 31 million people including 2.7 million Afghan refugees in Pakistan and Iran.

In 2018 Afghanistan's population is estimated at 34,940,837 based on the most recent UN data¹⁷⁶. Latest statistics are from 2019, providing an estimated population of 36,890,797 in Afghanistan¹⁷⁷. The population projected by 2050 is 82 million¹⁷⁸.

The population density of Afghanistan is estimated to 50-57 persons/km².

During the period 2001–2011 annual population growth rate was an estimated 3.2 percent.¹⁷⁹ In 2018 the estimation for population growth rate is 2.3%.¹⁸⁰

Only 42% of children under the age of five are registered after their birth, which is having a birth certificate.¹⁸¹

It is estimated that the rate at which cities are growing in Afghanistan is likely double the current average growth rate in Asia. Urban populations make up 23.5-26.7% of the total population¹⁸². In 1970, only 11% of the population was urban, in 2003 it had become 23% and it is expected to reach 42% by 2030¹⁸³. Therefore, in the nearby future, Afghanistan will foremost remain a predominately rural nation.

Some estimate that Kabul is the fifth fastest growing city in the world, with a population that has ballooned from approximately 1.5 million in 2001 to around six million people in 2014. People displaced by fighting in the countryside, refugees returning from Pakistan and Iran, and rural residents looking for economic opportunities are reasons of a shifting demography.

¹⁷⁴ Country Plan for Afghanistan https://files.globalwaters.org/water-links/files/Afghanistan%20Country%20Plan%20final_0.pdf

¹⁷⁵ <http://cso.gov.af/Content/files/Population.pdf>;

¹⁷⁶ World Factbook

¹⁷⁷ <http://www.worldometers.info/world-population/afghanistan-population/>

¹⁷⁸ Population Reference Bureau 2005; United Nations Population Division 2006

¹⁷⁹ FAO Aquastat http://www.fao.org/nr/water/aquastat/countries_regions/AFG/

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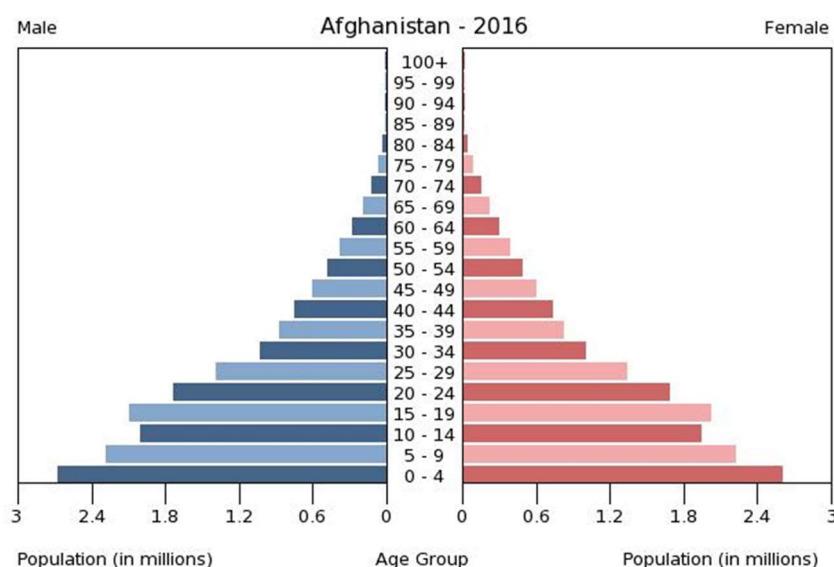
¹⁸¹ UNICEF <https://www.unicef.org/afghanistan/stories/birth-registration-passport-future>; <https://data.unicef.org/country/afg/>

¹⁸² World Factbook; <http://www.worldometers.info/world-population/afghanistan-population/>

¹⁸³ United Nations Population Division 2006

Afghan national demographic composition is complex and is composed of a multi-ethnic and multi-lingual society. According to the World Factbook Pashtun is the largest ethnicity in the country, followed by Tajiks, Hazars, Aimaks, and others. In total 14 ethnic groups are recognised by the constitution of Afghanistan, however it is a very sensitive issue.¹⁸⁴ It is estimated that 99.7% are Muslim.

Life expectancy for female is 53.6 years and for male 50.6 years, estimated in 2018 with an estimated total fertility rate of 5.7/woman. Child mortality is the highest in the world. 52% of the population is under 18 years of age.



Source: Wikipedia based on WB statistics.

Afghans are estimated to be the second largest group during the recent migrant crisis, with more than 178,000 mainly young Afghan men applying for European Union asylum in 2015, and 183,000 the following year. In the neighbouring countries registered Afghan refugees count for 2.4 million in Pakistan, and 1 million in Iran. Adding, some 2.3-2 million undocumented Afghans in these neighbouring countries.

Historically, Afghans have always been “on the move”. As many as 8.5 million, or one in four Afghans have been displaced internally or abroad during the last four decades due to conflict, natural hazards, disasters and the resulting socio-economic challenges.

Despite the high child mortality rate, the low life expectancy and refugees outside the country the doubling time for the Afghan population is less than 30 years¹⁸⁵. More people put more demands on the natural environment, leading inevitably to a high burden on natural resources, decline in biodiversity, and ecosystems, and to an increase of pollution. The rapidly increasing population of Afghanistan presents a major underlying challenge to ecological resilience and ultimately to the quality of life for Afghans.

¹⁸⁴ World Factbook; Breu et al, 2014

¹⁸⁵ RETURNS TO AFGHANISTAN IN 2017 Joint IOM-UNHCR Summary Report

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Annex 4 Data gathering challenges

The limitation of data gathering is a substantial obstacle regarding environmental aspects in Afghanistan. There are many sources, however they are difficult to validate and verify. This annex is to highlight some of the data gathering aspects that occurred during the desk study of the environmental overview and to say that it is important to be cautious regarding data and critical to information. The data struggle is also illustrated with some examples.

There is a chain of limitations that have been recognised during the course of writing. These are; lack of evidence, lack of recent sources and updated data, lack of verifiable data, limitations of documentation, contradictory figures and facts, inconsistent details and generalised statements.

The problem with data gathering falls back on the fact that it is difficult to be certain of which flaws that hide in the data and information. For example; there are logistical difficulties in carrying out research in the country; there are inherent problems and assumptions that continue with new studies; there is a high variability in context and generalisations made on a national basis that become problematic, and; support by the international community has no systematically and or meaningful measurements of output.¹⁸⁶

Unverifiable data:

For example there are many sources that refer to that the natural resources and associated biological diversity provide the basis of a livelihood for 80% of the population. However it is not possible to verify the percentage of the population living from agriculture or for instance having their income from other assets such as day-work and remittances. Anyhow, a core assumption has been that agriculture is the main source of livelihoods for a majority of the population and that agriculture is the most important sector for development. This has endured, and is reflected in the documents from GaA and the international community¹⁸⁷. Important to consider is that the estimations of agriculture is not drawn from income statistics or national agriculture statistics etc, but as an assumption of being the most important livelihood in the country.

Also there are estimations by UNEP and NEPA that claim that by 2060, large parts of the agricultural economy will become marginal without significant investment in water management and irrigation. These are estimations merely made by computerised models without triangulation.

The unverifiable data also comprises the estimations on access to clean or safe water for drinking. The example that is estimated is that more than 65% of Afghans have clean drinking water, but that should be questioned. Data is not verifiable or available providing exact statistic, is not consistent, not complete nor gender aggregated. All information is based on estimations and differ between sources and it becomes even more in question as population of Afghanistan is as unprecise as it is.

Lack of information and data:

Climate change is an important aspect affecting the whole country more or less in extreme ways. For example, lack of available data on meteorological records and trends in Afghanistan and from the region makes it difficult to predict and identify with refinement how the climate change will progress.

¹⁸⁶ Cordesman 2010; Pain/Hout 2012

¹⁸⁷ National Comprehensive Agriculture Development Priority Program 2016 – 2021 Government of Islamic Republic of Afghanistan Ministry of Agriculture, Irrigation and Livestock

In Afghanistan there are insufficient data and limited understanding of climate change-induced disaster threats both across institutions at the national and sub-national levels and at the community level. There is an absence of centralized data management system for climate change induced disasters and disaster management and an absence of effective monitoring and evaluation mechanism to track impacts of interventions. Further, there is limited research on the gaps in contingency plans and emergency preparedness and response at village and district levels. Gender sensitive data is missing in the country, which constrains the formulation of adequately targeted responses.¹⁸⁸ The availability of disaster risk information is particularly important for a fragile state like Afghanistan.

Further, reports produced by NEPA or other Afghan ministries for UN agencies state that for example reliable energy data for Afghanistan is about as scarce as energy in Afghanistan. It implies a lack of data, however to what extent is not possible to uncover.

Furthermore, a major constraint regarding climate mitigation and adaptation is the overall unavailability of information or relevant data. The poor quality and organisation of data is a major constraint for analysis of biophysical processes of climate change and for cost/benefit analysis of adaptation and modelling projects and policies.

So far, no comprehensive research is made to establish or disprove the link between depleted weapons (i.e uranium), health (i.e. links to carcinogenic death) and the impact on the environment.

Lack of available soil information, lack of information regarding farming practices, lack of information regarding land management planning are other areas where information is simply not available or outdated.

Aid organisations, including UN, have difficulties in providing meaningful data on aspects of the effectiveness of its efforts within development programmes. There are sometimes project or activity counts, but they are not related to the requirement nationally or in a given area, or to any meaningful measurement of actual output. As international development cooperation is ongoing so is the conflict and armed battles and although, official reporting consists of data, it does not address either Afghan needs nor what may be left of project efforts, or the impact of overall aid efforts.

Re-citing and misunderstandings of data:

While reading documents it becomes recognisable that there are citing and re-citing, and especially as the source is based on a variety of documents that inconsistencies develop. It also becomes second hand data which is not verified or possible for being verified as; data is already outdated; the first hand source is not available anymore or; with the number of times the data has been re-cited it turns out more flaws develop.

For example, it is stated in sources citing each other over a long period of time that “in theory, Afghanistan is not a water-scarce country with estimated overall water surplus”. However, it is difficult to validate the accuracy of that statement as there are very little or no evidence based research, and estimations are done on methods with digitalisation and remote sensing.

Outdated information and data:

Regarding biodiversity in Afghanistan much of the information is old and no longer reliable. There is little significant information that has been gathered since the onset of war in 1978. In 1971 research was published that is extensively referred to, still today. In 2008 UNEP published the latest most comprehensive overview of Afghanistan’s biodiversity status, concluding that a scientific inventory of

¹⁸⁸ <https://www.adaptation-undp.org/explore/afghanistan>

flora and fauna has to be developed to halt negative impacts on biodiversity, ecosystem and ecosystem services¹⁸⁹.

The data may however not be false, and it may be interesting from a historic point of view. Hence it gives not an up to date picture of an area, subject or situation.

Lack of definitions:

Definition of concepts and words are not always easy. There are data regarding desert in Afghanistan, and although there are figures provided, it is not verifiable. Desert may be defined differently however in Afghanistan context it has not been cautiously defined and therefore it may not be clear what desert or desert-like environment do comprise and look like. For example the figures provided that the country is covered by desert to 30% or that 70% of the country is prone to desertification is too vague for understanding the conditions. More research is needed to understand the dynamics of desertification and land degradation. Presently there is only a surface understanding of the levels of vulnerability and consequences in highly fragile arid and hyper-arid rangeland ecosystems in Afghanistan.

Information time gap:

Change over time is important to measure within regular and frequent time span to acknowledge trends. This is has not been possible to do for a long time in Afghanistan.

Because of a gap of more than 20 years in the record of hydrologic and climatic on-the-ground observations, due to ongoing security situation, considerable use of remotely sensed data and, where available, historical records have been used to achieve baselines. That has limited the knowledge regarding i.e. water resources change in the country, whereas empirical research over time would provide a supportive timeline to understand potential future events¹⁹⁰.

The above information regarding environment in Afghanistan demonstrates the difficulty of providing accurate data, accessibility to retrieve data, timing challenges for retrieving data i.e. annual fluctuations, security issues, as well as definition of indicators.

¹⁸⁹ UNEP 2008

¹⁹⁰ USGS Fact Sheet 2014

Annex 5 International obligations by Afghanistan

Below a list of Afghanistan's international obligations. The list is not comprehensive, however states the most important environmental international conventions that the country has signed¹⁹¹.

United Nations Convention to Combat Desertification – UNCCD	Signed, 1995, ratified 2002
United Nations Convention on Biodiversity – UNCBD	Signed, 1995, ratified 2002
United Nations Framework. Convention on Climate Change – UNFCCC	Signed, 2002, ratified 2004
Vienna Convention for the Protection of the Ozone Layer	Joined 2004
Convention on International Trade Endangered Species of wild Fauna and flora – CITES	Signed, 1985, ratified 1986
Montreal protocol on substances that deplete the ozone layer	Joined 1986
Convention on Migratory Species – CMS	Signed in process of ratification
Stockholm Convention on protect human health and the environment from persistent organic pollutants	Ratified in 2013
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	Ratified in 2013
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	Ratified in 2013
Kyoto Protocol (under UNFCCC to control greenhouse gas emissions)	Ratified in 2013
Kartagena Protocol on Biosafety (a supplement to the Convention on Biological Diversity)	Ratified in 2013
ECO Economic Cooperation Organization, Environment is one of its cooperation areas	Signed in process of ratification
RAMSAR Convention on the conservation and sustainable utilization of wetlands and their resources	In process of ratification

The key regional institutions that Afghanistan is a member of are the South Asian Association for Regional Cooperation (SAARC), Regional Environmental Center for Central Asia (CAREC), Southeast Asian Nations (ASEAN) of which all have a mandate for environmental protection.

¹⁹¹ NEPA 2015

Annex 6 Terms of Reference

ToR for Afghanistan Environmental and Climate Change overview

1. Introduction

Sweden has a long-term commitment to Afghanistan until 2024. The Swedish strategy for cooperation with Afghanistan is coming to an end in 2019. During 2014-2019, Sweden's cooperation with Afghanistan has focused on five results areas – empowerment (democracy, human rights, state-building), education, employment, economic integration (roads, financial sector, energy) and economic development (rural development and private sector development). It is likely that these sectors will remain for the new strategy. The Environment and Climate Change Overview will also serve as an input to the analysis of multidimensional poverty (MDPA) in Afghanistan.

2. The Assignment

The purpose of the assignment is to assist the Afghanistan unit at Sida and the Development Cooperation Section at the Swedish Embassy in Kabul in preparing a basis for a new strategy by preparing an overview of current environment and climate change issues.

3. Specific tasks

The outline below suggests the content of the overview.

A, Introduction

- Short introduction, overall aim

B, Key environmental and climate change topics including what is outlined as part of the environment and climate context in Sida's MDPA concept

- Key environmental and climate change challenges and trends including transboundary issues and risks
- Causes and key drivers, including short and long term consequences

C, Policy and strategic framework for managing environmental challenges and climate change

- Brief overview of the institutional framework for environment
- Brief overview of the institutional framework for climate change
- National priorities, policies and sectors that affect the environment, climate change and natural resource utilisation
- Mainstreaming of environment and climate change in the policy framework
- International obligations
- National Climate Change Adaptation Policies and Plans
- National Climate Change Mitigation Policies and Plans

D, Impact of the environmental and climate change problems

- Impact on people living in multidimensional poverty and prospects for poverty reduction. Describe the impact along the four dimensions of poverty that Sida identifies (resources, opportunities and choice, power and voice, human security). Include risks and vulnerabilities.
- Impact on and links to economic and social development along the three other aspects of the context of the MDPA (economic and social context, peaceful/conflict context, and institutional context). Focus on links to internal displacement and migration, humanitarian needs and conflicts.

E, Risks

- Risks

F, Brief overview of main international partners

- Multilateral actors
- Bilateral donors

4. Methodology

This assignment will be undertaken as a desk study. The helpdesk team will identify relevant documents and analyse them.

5. Duration

The estimated time for the assignment is 15 working days.

6. Reporting

A draft version should be sent to Sida, att: Karin Kronlid, November 5, 2018 at the latest. After comments from Sida a final version should be submitted within a week. The document should be submitted in writing and also presented verbally to the Afghanistan unit in Stockholm.

7. Budget

All costs shall be covered by the Helpdesk's budget.

Annex 7 Abbreviations

ACTED	Agency for Technical Cooperation and Development
ADB	Asian Development Bank
ANPDF	Afghanistan National Poverty and Development Framework
CITES	Convention on International Trade Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species
COPD	Chronic Obstructive Pulmonary Disease
IDP	Internally Displaced Persons
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
ELA	Environmental Law of Afghanistan
EU	European Union
GLASOD	Global Assessment of Soil Degradation
GoA	Government of Afghanistan
ICT	Information Communications Technologies
IDPs	Internally Displaced Persons
INC	Afghanistan Initial National Communication
IOM	International Organization for Migration
IRIN	Integrated Regional Information Networks
MAIL	Ministry of Agriculture, Irrigation and Livestock
MEA	Ministry of Energy and Water
MDPA	Multi-Dimensional Poverty Analysis
MoCI	Ministry of Commerce and Industry
MoMP	Ministry of Mines and Petroleum
MoPH	Ministry of Public Health
NCEA	Netherlands Commission for Environmental Assessment
NEPA	National Environmental Protection Agency

SAK	Swedish Afghanistan Committee
UNAMA	United Nations Assistance Mission in Afghanistan
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNODC	United Nations Office on Drugs and Crime
UNOCHA	United Nations Office for Coordination of Humanitarian Affairs