

CLIMATE CHANGE IN AFGHANISTAN: PERSPECTIVES AND OPPORTUNITIES



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Executive summary:

Afghanistan is among the median countries in the world when it comes to GHG emissions. It is however among the most vulnerable countries to the effects of climate change, particularly in relation to vulnerability to droughts, floods, landslides/avalanches. This is due to some extent to its level of exposure but it is also the consequence of a very high sensitivity of its population to the stimulus of climate shocks. The sensitivity is multidimensional and is based on socio-economic, cultural and political factors. Women are among the most severely affected as climate change often affects a number of daily tasks that are culturally associated with women's responsibility such as household water supply or collecting resources for heating and cooking, etc.

The expectations for Afghanistan are not so much about reducing GHG (at least not in the short- to mid-term) as this would neither be realistic nor fair considering the poverty situation and the comparatively low level of development in the country. The challenge is more about ensuring that the increase in GHG emissions that accompanies the development of the country is benefiting more the poor who are the most vulnerable to the effect of climate change.

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

Up to now the main programs are led by UNEP. Some NGOs do relevant work that directly or indirectly relate to climate change and/or vulnerability to climate related shocks. This includes work on renewable energies and capacity building capacity of communities in relation to disaster preparedness, or more broadly speaking on poverty alleviation. But the extent to which each of these initiatives impact on vulnerability of communities is unclear.

There has been a global absence of interest in the topic despite climate change being regularly mentioned as a problem for Afghanistan development.

What is also missing is a strong involvement of the civil society facilitating debates and discussions on the broad strategy that Afghanistan should adopt when it comes to climate change.

With its experience in facilitating learning and information exchange platforms, HBS could play a very useful role in developing platforms that facilitate capacity building of CSOs. In a nutshell this platform would:

- Facilitate discussions around the various definitions, concepts and approaches related to climate change.
- Facilitate collective analysis of studies related to climate change (including on issues of vulnerability).
- Facilitate collective analysis of existing policies and programs, especially when it comes to the extent to which policies and programs are 'pro-poor' and the extent to which they follow a human right approach.
- Support knowledge and data sharing among INGOs and Civil Society Organizations (CSO) and advocate for access to information.
- Support knowledge sharing among INGOs and CSO around low emission technologies.
- Facilitate information sharing on funding mechanisms to support civil society initiatives in tackling climate change.

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1. Introduction: defining climate change and its challenges

- **Defining climate change**

Climate change is defined by the United Nations Framework Convention on Climate Change (UNFCCC) as "*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.*" (UNEP, 2009, p.16)

This phenomenon is due to the process of industrialization that has been taking place over the past few centuries. The use of oil and coal, but also deforestation, and certain agriculture practices have induced a significant increase in the production of greenhouse gases (including carbon dioxide, methane, and nitrous oxide) in the atmosphere. This increase in quantities has been altering the climate, including through increase in global temperature. (UNEP, 2009)

Climate change translates at global level into progressive increase in average temperature, sea-level rising, increase in the intensity and frequency of climate shocks such as floods, droughts and storms. The physical impacts depend on the geography and local interactions between global warming and existing weather patterns (UNEP, 2009, p.16). However, the impacts on social and human development are not only dependent on the physical processes but on the existing social and economic vulnerabilities (see section 2).

- **Climate change impacts and human rights**

Climate change is jeopardizing the fulfilment of people basic physical and physiological needs. These include: enough food and drinking water, clean air, warm and dry shelter; physical and psychological inviolacy (including, for example, sanitation), sufficient health care, (in the case of illness, injury, old age, etc.) and relaxation; a basic level of social recognition; the minimal capability to self-determination and cultural identity as well as minimal self-confidence concerning one's own capabilities (Kowarsch and Gösele, 2012).

The fact that climate change threatens the realization of internationally recognized human rights has been recognized by the UN Human Rights Council (Council) in a consensus resolution (Resolution 10/4) in March 2009. The same resolution acknowledges that the rights of the most vulnerable people in the social, economic and political spheres will be most affected. These include people living below poverty line, most particularly women, children and indigenous groups (Reder, 2012, p.65).

- **Vulnerability to climate change**

Climate shocks and the possible disasters that result from them are not only caused by natural events but are also *"the product of social, political and economic environments (as distinct from the natural environment), because of the way these structure the lives of different groups of people."* (Wisner et al., 2003). In other words, the damages that are associated with climate shocks (e.g. storms, droughts, floods) and slow climate changes (e.g. temperature rise) are largely shaped by the existing social, political and economic vulnerabilities of people on the ground (Ribot, 2010, p.47).

Taking a vulnerability approach changes the way one looks at evaluations related to climate change. The risk-hazard models look at the multiple impacts of a single climate event (e.g. a drought or flood). The social constructivists (including those following an integrative framework) take a very different perspective as they look at the causes of vulnerability. They look at the multiple causes of a given outcome of an event, by investigating the social systems. Integrative framework view vulnerability as having *"an external dimension, which is represented...by the 'exposure' of a system to climate variations, as well as an internal dimension, which comprises its 'sensitivity' and its 'adaptive capacity' to these stressors"* (Ribot, 2010, p.53).

Thus, from a social constructivist approach, vulnerability to climate shocks is conceptualized as a function of exposure, sensitivity and adaptive capacity (McCarthy et al., 2001).

- Exposure refers to the character, the magnitude and the frequency of climate shocks (or the degree of stress) a system is facing.
- Sensitivity refers to the degree to which a system (e.g. household) is affected by climate shocks.
- Adaptive capacity refers to the ability or potential of a system to deal with disturbance (shock or stress) and to respond successfully to climate stimuli (McCarthy et al., 2001). It has also been defined as *"the ability to design and implement effective adaptation strategies, or to react to evolving hazards and stresses so as to reduce the likelihood of the occurrence and/or the magnitude of harmful outcomes resulting from climate-related hazards."* (Malone, 2009)

The factors 'sensitivity' and 'adaptive capacity' will be referred to as 'social vulnerability' in this document.

Vulnerability analysis, by contrast with risk-hazard analysis, look at who is vulnerable so that relevant assistance strategies can be develop to address their specific situation.

In Afghanistan, some attention has been paid to risk-hazards models and impact assessment. This is for instance the case in the National Capacity Needs Self-Assessment for Global Environmental Management (NCSA) and National Adaptation Programme of Action for Climate Change (NAPA) documents which include sector impact assessments. But very little attention has been put on vulnerability analysis from a constructivist approach. The NCSA/NAPA do not talk about why people are vulnerable and do not look people's 'sensitivity' to climate shocks. Similarly the Afghanistan National Risk and Vulnerability Assessment (NRVA) does not include any climate change 'sensitivity' indicator (although there are sufficient data to establish one as will be discussed in section 2).

In addition to vulnerability studies, there are also coping and adaptation studies which identify vulnerability reduction strategies deployed by poor and marginalized populations, and the means to support such strategies. Even though such studies do not explain why people become vulnerable they provide insights in to local vulnerability management. (Ribot, 2010, p.60). Note that in Afghanistan, there are very few studies that have looked into climate change coping and adaptation strategies.¹

- **Vulnerability, Gender and Climate Change**

When taking a vulnerability approach to climate change and looking at 'who is vulnerable', it is important to include a gender perspective.

While it is generally recognized that gender inequalities throughout the world lead to more severe experience of poverty by women than by men, it should be further underlined that climate change contributes to reinforce these already existing gender inequalities. This is particularly because climate change affects dimensions that are often critical for coping with the effects of climate change. These dimensions include inequalities in access to wealth, new technologies, education, information, and other resources such as land. (Demetriades and Esplen, 2010, p.133-134). Climate change also affects a number of daily tasks that are culturally associated with women's responsibility such as household water supply or collecting resources for heating and cooking, etc.

¹ One of such study is Pain, A., (2001). *"Livelihoods under Stress in Faryab Province, Northern Afghanistan: Opportunities for Support"*, Islamabad: Save the Children.

Furthermore, women are usually underrepresented in decision-making platforms on climate change at all levels. This severely limits their ability to contribute their expertise to defining and implementing solutions.

- **Climate change, poverty, development and justice**

It is clear that the current energy mix that fuels economic growth and development in most countries is associated with greenhouse gas (GHG) emissions that contributes to climate change and its negative impacts. On the other hand, GHG emissions cannot be considered in isolation from the critical issue of reducing poverty through development (Edenhofer et al., 2012, p.1). Indeed, a drastic restriction on GHG emissions would compromise opportunities for relatively cheap economic growth and poverty reduction in many poor countries. Furthermore, while these countries did not contribute to the existing level of GHG emissions, they are the most affected by (and the most vulnerable to) its impact. They also often lack the means to develop and adopt adaptation measures (Edenhofer et al., 2012, p.2).

Clearly, debates about tackling the complex issues of climate change, sustainable development and poverty alleviation raises the question of justice. In this regard, some suggest that poorest countries should not be constrained to reduce emissions considering that it would jeopardize their ability to to reduce poverty and ensure their population live in dignity (Gösele and Wallacher, 2012, p.103). At the same time, justice would demand that economic growth in such conditions would contribute, in priority, to reducing poverty and addressing the conditions of the most vulnerable. In other words, *"poor segments of the population have to profit from growth on a higher-than-average scale"* (Gösele and Wallacher, 2012, p.100).

Thus, through this justice lens, economic growth has to follow a path that include criterion of climate compatibility and poverty alleviation (Klasen, 2004). Furthermore, this process of poverty oriented development needs to be supported by richer countries (Gösele and Wallacher, 2012, p.103).

- **Summary**

Part of the challenge with climate change is to limit GHG emissions to a level that would prevent dangerous anthropogenic interference with the climate system, and thus reduce exposure to climate change (i.e. the magnitude and the frequency of the shocks and stress induced by climate change). In this regard, states have an obligation to take measures (at individual and collective level) to reduce GHG emissions, and adapt to the expected and inevitable impacts of climate change. This

would ensure that food production is not compromised and that economic development can be ensured in a sustainable manner. (UNEP, 2009, p.16)

The other part of the equation is to reduce people's sensibility to climate change and improve their adaptive capacity to deal with its effects (i.e. more intense and more frequent climate shocks such as droughts and floods, increase in temperature, etc).

At a global level, dealing with climate change has to be done in conjunction with other major challenges such as reducing poverty and enabling development. How each country is expected to address this complex equation will differ widely depending on their level of development, poverty and contribution to general GHG.

2. Climate change and vulnerability to climate change in Afghanistan: facts and figures

In this section, we take stock of what is known about Afghanistan GHG emissions, the expected trends in temperatures and precipitations, the level of exposure to droughts, floods and other climate hazards influenced by climate change, and the social vulnerability of Afghan communities to climate change.

- **Green-House Gases emissions**

Afghanistan GHG total emissions are below the World median of 40.4 Mt CO₂ e. The country contributes 0.06% of the World GHG total emissions. Its emissions have doubled since 1995. Except for Tajikistan, Afghanistan emissions are significantly lower than its neighbours. (Table 1)

Country	Total GHG Emissions Including Land-Use Change and Forestry (Mt CO ₂ e) (2012)	Percentage of World GHG Total Emissions	Rank (out of 186 countries)
Tajikistan	9.1	0.02%	137
Afghanistan	30.8	0.06%	104
Uzbekistan	237.8	0.50%	33
Pakistan	341.6	0.72%	26
Iran	711.9	1.50%	11
China	10,684.3	22.45%	1

Table 1: GHG emissions for Afghanistan and its neighbours.

Source: World Resource Institute (2012)

In Afghanistan, the contribution of each sector to the total GHG emissions is very different than for the World average picture. While the energy and industry sectors represent close to 80 per cent of total GHG emissions in the World, they represent only less than 15 per cent in Afghanistan. Inversely it is the agriculture sector that contributes the most (more than half) to the total GHG emissions in Afghanistan while this sector barely represents 11 per cent for the global emissions. (Figure 1) This is perhaps not surprising considering the comparatively low level of energy and industrial development of Afghanistan.

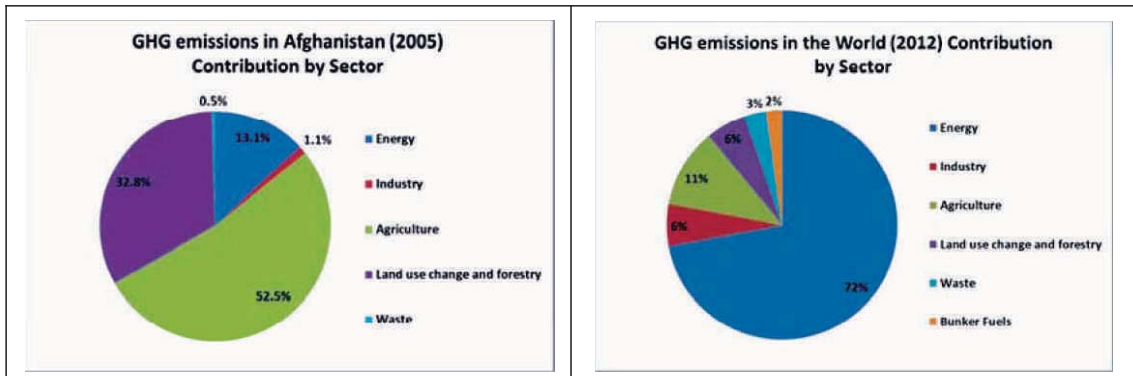


Figure 1: Distribution of GHG emissions by sector.
Source: NEPA (2011).

The business-as-usual projection predicts a more than 30% increase in total GHG emissions between 2020 and 2030 (Figure 2):

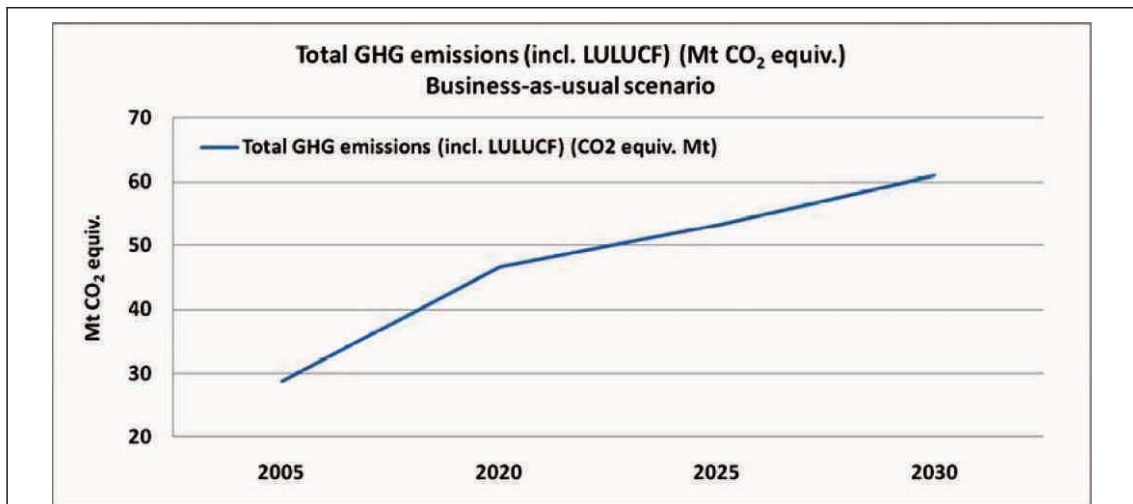


Figure 2:
Source: Based on IRA (2015).

- **Exposure to temperature changes (trend)**

In Afghanistan, the mean annual temperature has increased by 0.6°C since 1960, at an average rate of around 0.13°C per decade. According to Savage et al. (2009) it is projected to increase by 1.4 to 4.0°C by the 2060s, and 2.0 to 6.2 degrees by the 2090s. The 'Intended Nationally Determined Contribution' (INDC) report mentions an expected warming of 1.5°C until 2050 and of approximately 2.5°C until 2100 under an 'optimistic' scenario. The 'pessimistic' scenario projects a 3°C increase until 2050, with further warming up to 7°C by 2100 (IRA, 2015).

- **Exposure to precipitation changes (trend)**

Mean rainfall over Afghanistan has decreased slightly (at an average rate of 0.5mm per month (or 2%) per decade,) since 1960. It has been recently observed that a slight decrease was observed mainly during the spring season (IRI, 2015).

Savage et al. (2009) project that precipitations would vary between -31% to +28% by the 2090s with ensemble median values of -5 to -8% in annual rainfall. Note that the complex topography in Afghanistan means that local variations in response to precipitation are likely to be large and many areas may vary from the regional trends (Christensen et al., 2007). The INDC report does not report projections of global decrease in precipitations but rather a change of patterns especially in the North, Central Highlands and the East. Indeed, a 5-10% decrease is expected during spring time, but it is expected to be upset by an increase during autumn/winter. Nevertheless, the decrease during spring time is a concern particularly for rainfed agriculture (IRI, 2015), especially when combined with increase evapotranspiration (due to increase in temperatures).

- **Exposure to droughts and floods events**

Droughts:

Meteorological droughts, which occur in all arid and semi-arid areas of the world, are frequent in Afghanistan, as follows:

- Localized drought occur every three to five years.
- Countrywide drought occur every 20 to 30 years. (Azimi and McCauley, 2002).

An analysis of oral history and past rainfall data in Afghanistan and neighbouring Central and Western Asian countries reveals that the region has experienced four severe region wide periods of drought during the past century: in 1898–1905, 1944–1945, 1970–1972 and 1997–2004 (Figure 3). This confirms that extreme drought occurs every 30 to 40 years.

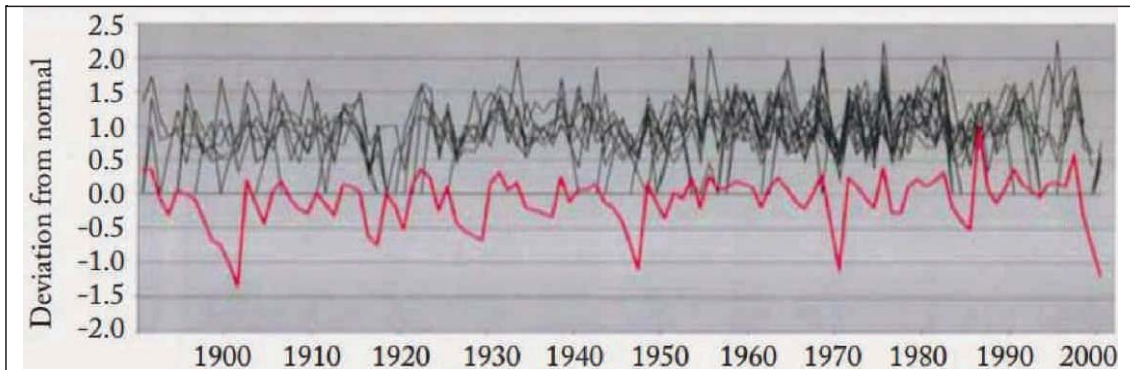


Figure 3: Long-term rainfall data from various regional stations (black lines), and cumulative above and below-normal totals (red lines).

Source: MRRD (2004)

The 1998–2002 and 2008 droughts were considered the most severe in Afghanistan’s climatic history and were reminiscent of the severe drought in 1898–1905 or the “Persian famine” of 1872 which was particularly severe in Herat and Afghan Turkistan.

Floods:

Afghanistan is first exposed to flash floods which occur mainly from February to June. The Kabul river basin is a notable exception because it is influenced by the monsoon and often suffers from flash floods in August and September. In the area not influenced by the monsoon, heavier rain and snowfall during the early part of the year are reflected in high-intensity flash floods (Beekma and Fiddes, 2011). River floods occur during the snow-melt period, primarily in June and July.

It is estimated that more than half of the population is physically exposed to ‘flood risk’ (including 15 per cent of the population being exposed to ‘high flood risk’). (Figure 4)

and the level of diversification of household livelihood activities outside agriculture are therefore important indicator to social vulnerability to climate shocks. Livelihoods that are solely based on 'agriculture and livestock' are considered the most sensitive as this sector of activity is highly affected during dry years. Furthermore, livelihood activities that are unstable (e.g. day labour, begging, etc) are also considered as most sensitive. This is also the reasoning that applies behind the socio-economic drought vulnerability index. This index measures the vulnerability of countries to socio-economic drought. It is formulated on the notion that greater contributions of the non-agricultural sectors to gross domestic product, a lower share of agriculture in employment and greater crop diversity collectively lower a country's chances of developing socio-economic drought if meteorological drought occurs (Thomas and Eqrar, 2011, p.75).

- A household which has several individuals contributing to the household incomes is likely to be less sensitive in times of shocks. The level of household dependency (as a ratio of members contributing to household income generating activities to the number of total household members) is thus an important indicator to sensibility or adaptive capacity.
- Education attainment is almost systematically included as an indicator of sensibility and adaptive capacity to climate change. Formal education is often critical in access to livelihood opportunities or social capital, and it is often associated with greater access to public facilities and, to a lesser extent, political networks.
- The possession of fungible assets can be very important for recovery from climate shocks (Eakin, 2006) as households are very likely to resort to selling fungible assets as one of the first coping measures. We do not include here assets such as land as selling such asset can have long-term negative consequences preventing the recovery of the household. It can be very relevant to take into account the level of indebtedness together with the value of fungible assets.
- Accessibility (or lack thereof) to basic services such as water, health facilities and food markets provides a buffer and protection against the effects of climate shocks.
- Social network, social capital and extra-local kinship ties can contribute to lessen the sensibility to climate shocks and improve resilience and adaptive capacity by providing conduits for information, preparatory measures and relief. Thus they are also very important indicators of sensibility to climate shocks, as social capital is very often mobilized to cope and/or recover shocks.
- Early warning and information is also particularly important for events such as floods and avalanches but also for drought events.

Social vulnerability to climate shocks in Afghanistan: National perspective

There have not been any national assessments of social vulnerability (or sensitivity) to climate change in Afghanistan. Most studies so far are 'impact' analyses rather than 'vulnerability' analyses.

It is however possible to get a sense of the level of social vulnerability in Afghanistan based on NRVA. Most of the variables from NRVA can be used to calculate indicators related to the above mentioned criteria, except when it comes to 'social network and extra-local kinship' and for 'early warning and information'.

In the table below, we provide an operational definition of each indicator and the proportion of households considered as vulnerable for each indicator.

Indicators of social vulnerability to climate shock and definition	% HH considered as 'vulnerable' (for the indicator)
Livelihood sensibility and stability: A HH is considered as vulnerable (for this category) when the HH incomes depend entirely on agriculture & livestock, day-to-day labour, or zakât ² .	33.8%
Livelihood dependency: A HH is considered as vulnerable (for this category) when the ratio of individual contributing to the total incomes is below 1 to 7 HH members.	25.6%
Educational attainment: A HH is considered as vulnerable (for this category) when the educational attainment of parents is limited to 'primary school'.	59.5%
Assets and debts: A HH is considered as vulnerable (for this category) when the level of debts higher than the value of their fungible assets, and thus have no readily available savings to cope with (climate) shocks.	32.3%
Water infrastructure access: A HH is considered as vulnerable (for this category) when it	56.4%

² Zakât = payment made by every Muslim who can afford it that is given to the poor and needy. One of the Five Pillars of Islam.

has access to unprotected sources or have to walk more than 1 hour (round-trip) to collect water from a protected source.	
Health facility access: A HH is considered as vulnerable (for this category) when members have to walk more than 12 hours to reach a health facility.	19.3%
Food marketplace access: A HH is considered as vulnerable (for this category) when members have to walk more than 12 hours to reach a permanent food market.	32.3%
Table 2: Proportion of household considered as vulnerable for different indicators of social vulnerability to climate shock.	

Table 2 indicates that there are more than one third of Afghan households which incomes depend entirely on agriculture and livestock (considered as a sensitive sector in relation to climate change), day-to-day labour (considered as unstable sources of income), or zakat.

More than half of households have no access to basic water infrastructure service, and close to 60 per cent of adults have educational attainment limited to primary school level.

Table 3 shows that almost all Afghan households show vulnerability to climate shocks for at least one indicator (defined in Table 3). More than half of households show vulnerability for at least 3 indicators.

% of households vulnerable in at least 1 category	94.8%
% of households vulnerable in at least 2 categories	79.5%
% of households vulnerable in at least 3 categories	52.2%
% of households vulnerable in at least 4 categories	24%
% of households vulnerable in at least 5 categories	7%
% of households vulnerable in at least 6 categories	1.3%
% of households vulnerable in at least 7 categories	0.1%
Table 3: Intensity of vulnerability to climate shocks.	

Thus, a substantial proportion of households are highly sensitive to climate shocks, irrespective of the level of exposure to such shocks. This underlines that in the context

of Afghanistan, socio-economic factors contribute highly to the overall vulnerability to climate shocks. Thus even if the level of exposure to climate shock may be similar to other arid and semi-arid countries, the overall vulnerability is likely to be higher in Afghanistan due to the higher sensibility / poor adaptive capacity (or social vulnerability) of its population.

This is exemplified by the following illustration (Figure 5) which indicates that although Afghanistan has the same level of exposure to flood than the US (in terms of population exposed), the number of people killed each year is more than 17 times higher in Afghanistan. (note that these figures would need to be updated), due to the higher level of sensitivity of Afghan households. Similar remarks could be made when it comes to vulnerability to droughts.

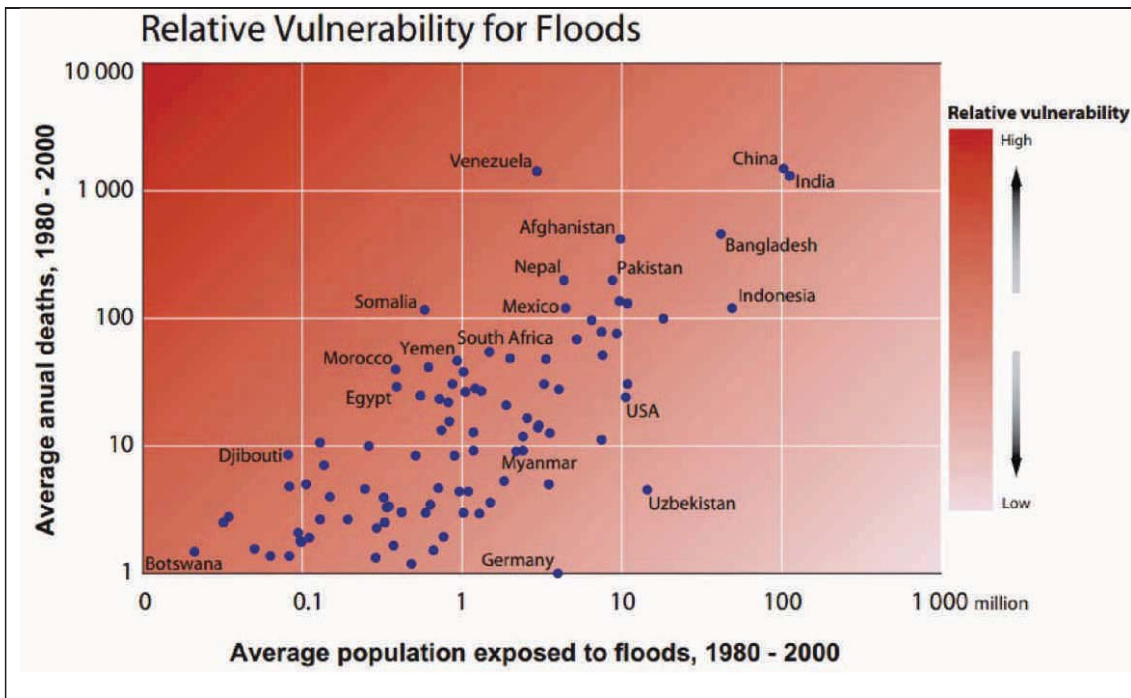


Figure 5: Relative vulnerability to floods
 Source: The EM-DAT OFDA/CRED International Disaster Database and UNEP/GRID-Geneva

Social vulnerability to climate shocks in Afghanistan: Provincial profiles

It is also important to underline that social vulnerability (or sensitivity) is extremely variable from one province to another, just like exposure would vary across different regions of Afghanistan.

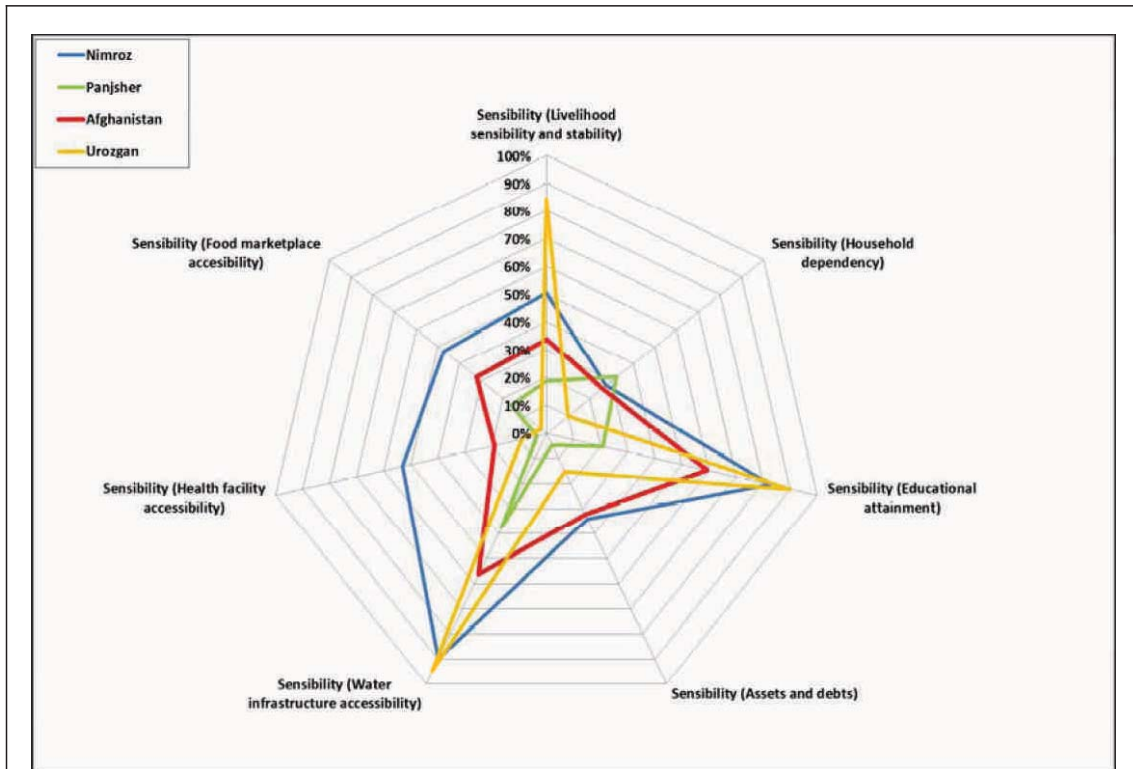


Figure 6: Sensibility and adaptive capacity profile for different provinces of Afghanistan and at national level.
Source: Author's work.

The variability of the social vulnerability profile at provincial level is illustrated with the cases presented in Figure 6.

Urozgan for instance shows a very high proportion (85%) of households that depend entirely on Agriculture and livestock and day-to-day labour for their income generating activities. Thus for this indicator, Urozgan is comparatively much more sensitive to droughts than Pansher where diversification of income sources (outside agriculture and livestock) is more important (with less than 20% of households depending solely on agriculture and livestock and unstable income generating activities). However, when it comes to household dependency or the capacity to mobilize fungible assets with a limited amount of debts to cope with shocks, Urozgan does fare much better than the national average. Accessibility to basic services is highly variable whether it comes to water, health facilities or food marketplaces.

This has direct implications for policies and programs as addressing vulnerabilities would require different type of focus in each Province.

- **Other factors affecting vulnerability to climate change**

It is important to be aware that gender is also an important factor that shape social vulnerability to climate change at intra-household level. For instance, when it comes to vulnerability to climate shocks such as floods, women and girls may be particularly vulnerable due to restrictions on female mobility.

In the case of floods and droughts it is however important to stress that vulnerability, for a given level of exposure, is not only affected by socio-economic factors as described above. There are also infrastructural deficits that contribute to the issue. Water storage capacity is necessary for drought preparedness because it allows excess water from floods and the spring thaw to be stored and used later during periods of higher demand or drought. The storage–drought duration index assigns an index value of 1 to a country’s storage capacity if it is satisfactory in terms of the average consumption of surface water and the mean annual duration of drought. The index of Afghanistan is estimated to fall between 0.1 and 0.25, ranking the country among the bottom 10 countries in the world (Thomas and Eqrar, 2011, p.75). Despite the government interest in improving this situation, Afghanistan still has the lowest storage capacity in the region and one of the lowest storage capacities in the world.

Furthermore, environmental degradation and unwise land use at the sub-river basin level are among the overarching factors behind an increase in disastrous flooding in Afghanistan over the past four decades (Thomas and Eqrar, 2011, p.79).

- **Main impacts of climate shocks on people’s lives, and coping/survival strategies**

Impacts of climate shocks that are discussed below focus on water resource availability, food production decline, livestock decline, migration, drinking water access, tensions around land access, indebtedness, health and education.

In 2008, lack of rain, compounded by below normal snowpack, caused wheat production to decline by 40 to 55 per cent countrywide. (MAIL (2009) and USDA (2008)) If it is evaluated against data on 2007, which is considered a normal year, the impact of drought was felt more strongly in rainfed areas (an 85 per cent reduction) than irrigated areas (a 16 per cent reduction).

Kandahar following the 2001 drought period estimated that wheat production had dropped by 40 per cent relative to an average year and that orchard production had

dipped 50 to 75 per cent. Similarly, the dry year in 2004 caused wheat production to plummet by 47 per cent overall, including a 68 per cent decrease in rainfed production and a 38 per cent decline in irrigated production. (FAO and WFP, 2004)

Drought has a significant effect on livestock. During the 1998–2002 drought, the number of livestock fell to less than half (Thomas and Eqrar, 2011, p.68).

The price of livestock fell by 40 to 70 per cent because of a combination of high wheat prices and a lack of grazing land. (FEWS NET, 2008) An estimated 4.5 million people required food aid. (USDA,2008). During the 2001 drought in Kandahar, 76 per cent of the goats and sheep had to be slaughtered, otherwise died, or had to be sold at almost 40 per cent below the normal price because of the loss in weight among the animals and the decline in demand.

The nomadic Kuchis rely on a livestock based economy for their livelihoods. They were hit particularly hard by the 1998–2002 drought and the dry year of 2004. Kuchis lost 50 to 70 per cent of their livestock. (FAO, 2003)

Drought increases the likelihood that family members will migrate at least temporarily. It is however difficult to tell, due to lack of specific studies on the link between climate shock and migration, the extent to which climate stresses and shock contribute to the motivations for migration.

A survey conducted in 12 provinces in the southern and western parts of the country in June and July 2004 found that there had been significant declines in the water-table and that this was having a severe impact on karezes. (MRRD, 2004)

During the dry year of 2011, a substantial proportion of Afghan households (47%) experienced drinking water related shocks (mainly expressed as a decrease in quantity available). By comparison, this figure was 18% during the average year of 2007.

In irrigated areas, water scarcity caused by hydrological drought intensifies the tensions between upstream and downstream villagers along canals and rivers, sometimes reinforcing existing hostility along ethnic or political lines. (Thomas et al., 2012)

Afghan households take out loans as a survival strategy, but only after selling household and productive assets. During the 1998–2002 drought, a large majority of households accumulated significant debt. Towards the end of the 2002 drought, 60

per cent of the households surveyed were classified as extremely debt insecure. (Lautze et al., 2002) Furthermore, certain informal risk management practices (e.g. credit-based instruments) have historically served as exploitative mechanisms, perpetuating and intensifying inequality. (World Bank, 2005)

If households become food insecure, the parents are more likely to put their children to work. As a result, many children drop out of school at least temporarily. If food becomes scarce, parents are usually the first to skip meals, which jeopardizes their health as they shoulder their household labour and economic responsibilities (Lautze et al., 2002). The extent to which such practices are specifically influenced by climate shocks and stresses is however difficult to quantify.

- **Summary**

Afghanistan is among the median countries in the world when it comes to GHG emissions. It is however among the most vulnerable countries to the effects of climate change, particularly in relation to vulnerability to droughts, floods, landslides/avalanches. This is due to some extent to its level of exposure but it is also the consequence of a very high sensitivity of its population to the stimulus of climate shocks. The sensitivity is multidimensional and is based on socio-economic, cultural and political factors.

The expectations for Afghanistan are not so much about reducing GHG (at least not in the short- to mid-term) as this would neither be realistic nor fair considering the poverty situation and the comparatively low level of development in the country. The challenge is more about ensuring that the increase in GHG emissions that accompanies the development of the country is benefiting more the poor who are the most vulnerable to the effect of climate change.

3. Policies, strategies, programs and actors focusing on addressing climate change in Afghanistan

This section analyses the policy, strategies and programs put in place by the Government of Afghanistan and its partners to tackle climate change and its negative impacts. It also underlines the key constraints that make it difficult to translate plans into tangible actions and results.

- **Policies and strategies**

A number of steps have been taken or envisaged to adapt to the impacts of climate change. There have been many relevant initiatives for developing national policies, plans and legal frameworks to address environmental challenges, disaster risk reduction, water security, food security, protection of forest and rangeland, and biodiversity conservation, all having synergy to adaptation to the climatic risks (NEPA, 2011, p.48). Indeed, in the last 8 years, more than 20 Policy, Plans and Legal Frameworks relevant to poverty reduction and adaptation to climate change have been passed by the government of Afghanistan. This includes the ANDS (that serves as the National Poverty Reduction Strategy Paper) (2008), the Environmental Law (2007), the Strategic National Action Plan for Disaster Risk Reduction (2009), the National Capacity Needs Self-Assessment for Global Environmental Management (NCSA) and the National Adaptation Program of Action (NAPA) (2009), the Initial National Communication to the UNFCCC (2011), and the Intended Nationally Determined Contribution (2015) (see Table 4 in Annex). In addition, Afghanistan has endorsed the Hyogo Framework of Action (HFA) to frame its response to disasters related to climate change. At the time of writing, the Afghan government is finalizing a National Climate Change Strategy and Action Plan (ACCSAP) and a National Adaptation Plan (NAP) (IRA, 2015).

- **Programs**

Over the past decade, a number of relevant programs have been initiated and supported by the international donor community and endorsed by the Afghan government (see Table 5 in Annexe for key programmes).

Major actors and contributors include UNEP, the Global Environmental Facility (GEF), as well as bilateral donors, and NGOs, the Tokyo Framework bilateral partners, and the Least Developed Countries Fund (LDCF). Recently, some INGOs have created the Afghanistan Resilience Consortium (ARC) with the objective to provide a coherent and coordinated response to Afghanistan's vulnerabilities to natural disasters and climate change.

Some relevant work that directly or indirectly relate to climate change and/or vulnerability to climate related shocks has been conducted. This includes for instance work on renewable energies and capacity building capacity of communities in relation to disaster preparedness, or more broadly speaking on poverty alleviation. It also includes upper catchment rehabilitation, reforestation and conservation, rehabilitation of irrigation systems, etc.

- **Critics on policies and programs**

A number of critics have been voiced in different reports regarding the above mentioned policies and strategies related to climate change. One general critic has been that despite being amongst the most vulnerable countries list to the impacts of climate change - which presents a significant threat to cross sectoral development - climate change is not a consideration in the national or sectoral plans of the Government of Islamic Republic of Afghanistan (GIROA). Even though Afghanistan has adopted the Hyogo Framework for Action (for disasters reduction), none of the actions have been translated into targets into national programmes.

Disaster reduction is often mentioned in narrative but often fails to be recognized as a core development policy. As NEPA report underlined, the word 'climate change' is not even mentioned in the ANDS (NEPA, 2011). So far Afghanistan does not have a global strategy regarding climate change, although it has a number of relevant policies and sectoral strategies that look into climate change related issues.

And although there are a number of measures contained within the different sectoral and national strategies that might be considered as relevant for adaptation to climate change, there are no clear assessments of climate thresholds. It seems that thorough mitigation assessments of the options to tackle climate change have not been conducted, despite the fact that this national strategy on mitigation and adaptive strategy was part of a project initiated in 2012.

Priority has been given to poverty reduction which is the ultimate objective of all sectoral plans and programs in Afghanistan. This is understandable considering that Afghanistan is among the least developed countries in the World. And poverty alleviation is not contradictory to climate change adaptation as discussed earlier. However, one critic that has been voiced in the INC-UNFCCC is the poor integration of priority concerns for poverty alleviation with climate change policies, as it is the key to harmonizing sustainable development and climate change actions. This means that Ministries need to improve the 'climate awareness and resilience' of their poverty alleviation development strategies. This issue is acknowledged by the GIROA but this has not yet translated into changes in approach.

Regarding programs and projects it is difficult to identify how each of the initiatives mentioned earlier fit in a broader strategy, to what extent these projects have had a significant impact on reducing the vulnerability of communities, and to what extent they have targeted the poorest segments of the population.

In any case, the INDC report underlines that the efforts made are not sufficient to effectively build the adaptive capacity and resilience of the country. The Afghan government estimates that it will need (from donors) more than 1 billion USD per year during the next decade in order to *"overcome the existing gaps and barriers towards sufficiently addressing its climate change adaptation needs"* (IRA, 2015).

- **Major constraints to translate policies, strategies and programs into tangible results**

The main constraints facing Afghanistan can be summarized as poor capacity, lack of data, low coordination, limited awareness and insufficient funding.

- A first major constraint is the overall **low availability of relevant data**, the poor quality of data, and the poor organization of data. This makes it difficult for any analysis of the biophysical process of climate change and for cost/benefit analysis of adaptations and modelling programs/projects/policies.

It is also a major constraint that limits the possibility of meaningful discussions on how to address the complex interrelated issues of climate change. Thus many reports underline the need to develop national capacity for generating and managing information, and conducting scientific assessment and research on extreme weather events.

- The low availability of data does combine with a **lack of coordination** in information sharing and a poor capacity in planning and carrying activities in a coordinated way. As a point in case, the Hyogo Framework of Action has failed to be translated into targets into national programmes.

- There is also a **poor institutional capacity** and know how particularly when it comes to developing, managing and upscaling programs related to the transfer of environmentally sound technologies. As mentioned in the Initial National Communication To the UNFCCC, *"Afghanistan does not have the institutional arrangement to provide information and know how on the environmental sound technologies to get easy access by private companies and individuals"* (NEPA, 2011, p.105). And *"Although promotion of the renewable energy technologies and some*

energy efficiency technologies are being developed or transferred in Afghanistan, in absence of the institutions with the primary objectives of providing information and know how on environmental sound technologies, it is still in the very low scale” (NEPA, 2011, p.105).

Thus despite the fact that NEPA, MAIL, MEW, MRRD are promoting renewable energy technologies in Afghanistan, and that many donors and NGOs are providing technical and financial support, the up scaling is likely to remain very limited.

- There is also a generally **low level of awareness** on climate change, from governmental to local level. This is despite efforts from (mainly) UNEP, USAID and UNOPS that led training programs over the past decade on environmental policies, legislations, multilateral environmental agreements, environmental assessment and pollution control, community based natural resources management, and protected areas management system. Note that NEPA and UNEP are currently implementing the programme “Building Adaptive Capacity and Resilience to Climate Change in Afghanistan” under LDCF fund which has a major component on trainings and awareness creations for the GIRoA on the impact of climate change and adaptation to the impact of climate change.

Furthermore, despite the fact that Afghanistan has been participating in several sub-regional, regional and international events that promote education, training and awareness in relation to climate change, the Initial National Communication To the UNFCCC underlines that 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 assessments, adaptation approaches and low carbon development strategies developed elsewhere in Central and South Asia can be applied in Afghanistan (NEPA, 2011, p.120). This would imply building partnership with universities in the region and other parts and initiate joint research works on the likely impacts of climate change and potential adaption measures in most vulnerable sectors in Afghanistan.

Awareness raising should not be limited to government level, and climate change activities should be incorporated into educational curricula at primary, secondary and tertiary levels in order to broaden public awareness of the issue. In addition reaching to the communities with well-planned awareness programs on climate change and prepare communities for the community based adaption measures and disaster risk minimization. So far, despite efforts from INGOs, there are too few community based institutions thoroughly trained for disaster planning and response, and not enough role for communities.

Better awareness would support the GIRoA in addressing the critic underlined earlier regarding the integration of climate change considerations in national or sectoral plans.

- At a more general level, Disaster Risk Reduction (as part of the strategies to prepare for the impacts of climate change) has been at the losing end in competition with larger development goals such as 'poverty reduction', 'health', 'food security', etc. Although this might be understandable in the context of acute poverty in Afghanistan, the fact that DRR has received very limited attention beyond rhetoric in Afghanistan has been regularly underlined as an issue by ANDMA. Note that this issue is not specific to Afghanistan.

- **Way forward proposed by the Government of Afghanistan**

Some efforts have been made in presenting the strategies/policies or programs conducive to the mitigation of the GHG emissions or help Afghanistan to continue its economic development with lowest per capita GHG contributions. In its recent report about 'Intended Nationally Determined Contribution' (INDC) report to the UNFCCC, the Afghan government claims that Afghanistan 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 allow Afghanistan to successfully develop and implement Low Emission Development Strategies (LEDS) and Highly Effective Adaptation and Development Strategies (HEADS)"* (IRA, 2015, p.2). Afghanistan is committed to limit its GHG emissions to 42.7 Mt CO₂e (excluding emissions from Land Use, Land-Use Change and Forestry) by 2030 instead of 48.9 Mt CO₂e if a business-as-usual is followed, provided that it is given 17.4 billion USD as financial support (IRA, 2015).

To limit GHG emissions, Afghanistan plans to develop its **energy sector** through HP (large projects and decentralized MHP in rural areas) – clean energy – including through transfers from neighbouring Central Asian countries. It also intends to develop its significant potential for solar, wind and biogas energy production (as highlighted by Milbrandt and Overend (2011)). The INDC proposes to provide renewable energy sources to 25% of the rural population (existing level are at 15%) (IRA, 2015). Afghanistan is committed to provide info on how it intends to achieve sustainable development through low carbon footprint. Furthermore, the policy and legal environment promotes the use of environmentally sound technologies.

The “Initial National Communication to the UNFCCC” talks about the intention to **reverse the trend in deforestation**, while the INDC has for objective to regenerate 40% of the existing degraded forests and rangeland areas (IRA, 2015). It also aims at keeping at least 10% of Afghanistan land area under a system of conservation (IRA, 2015). There is a comprehensive package of policies and laws to enable this work and a few prioritized measures such as Conservation and Management of Rangelands, Conservation and Management of Forests, Protected Area Management and Development of Renewable Energy have been proposed (NEPA, 2011).

For developing its **mining sector**, Afghanistan has a number of laws which, in principle, should ensure the development of the mining sector with minimum energy and limited GHG emission.

And **agriculture and rural development** is the most prioritized sector to achieve the goal of poverty reduction, with five strategic focus areas underlined in the ANDS including ‘emergency and disaster preparedness’. Overall, the Afghan government plans to allocate around 70% of the 10.7 billion USD expected as financial support for climate change adaptation (until 2030) to watershed management and expansion of irrigated agriculture (IRA, 2015).

• **Conclusion**

What transpires from the different reports is that Afghanistan is not short of policy documents that provide a framework to tackle issues related to climate change, even though a national development strategy on climate change is missing. The Afghan Government has even recently defined its target for reduction in GHG emissions by 2030 and the required actions and funds to achieve it. But what is most problematic is an overarching lack of capacity that limits progress when it comes to the actual application of the policies and implementation of plans.

Up to now the main programs are led by UNEP. Some NGOs do relevant work that directly or indirectly relate to climate change and/or vulnerability to climate related shocks. This includes work on renewable energies and capacity building capacity of communities in relation to disaster preparedness, or more broadly speaking on poverty alleviation. But it is difficult to identify of each of these initiatives fit in a broader strategy, and to what extent it impacts on vulnerability of communities. More coordinated responses among INGOs might be emerging in the near future (see for instance the recent creation of the Afghanistan Resilience Consortium (ARC)).

Furthermore, there has been a global absence of interest in the topic despite climate change being regularly mentioned as a problem for Afghanistan development.

What is also missing is a strong involvement of the civil society facilitating debates and discussions on the broad strategy that Afghanistan should adopt when it comes to climate change. As in other areas of development, think tanks bring virtually no contribution to the debate.

4. Recommendations for HBS

This section provides some suggestions as to how HBS could support the current and future efforts in tackling climate change and its impacts in Afghanistan.

Although the Afghan Government and the donor community have recognized that capacity building and awareness raising needs to be improved at government level, there is usually less emphasis on the need to support the civil society. Yet, the long-term resolution of societal and environmental issues require a lively public engagement. In this regard, the integration of a gender-sensitive perspective in platforms that discuss climate change responses is essential considering the particular vulnerability of women to the effects of climate change and their locally specific knowledge on adaptive strategies.

- At a general level, there is a need for facilitating discussions between CSO around the various definitions, concepts and approaches related to climate change. There is also a need for facilitating collective analysis of studies related to climate change (including on issues of vulnerability) and also on collective analysis of existing policies and programs, especially when it comes to the extent to which policies and programs are 'pro-poor' and the extent to which they follow a human right approach. Public participation is indeed critical to assess whether there is a reasonable balance between development, economic growth and poverty alleviation. There will be win-win development opportunities like decentralized access to energy with renewable/green energy which would have a positive effect on reduction / limitation in GHG emissions. But these cannot be the panacea for development of the Afghan economy. There will be situations where development and poverty alleviation will mean increase in GHG and contribution to increasing the negative impacts of climate change. How this can be balanced out is what needs to be discussed through participatory and inclusive processes.

- More specifically it is important to support CSOs in pushing governmental institutions to take a **human right focus** when working to mitigate climate change or adapt to its impacts. This requires a well capacitated civil society that has the ability to hold government actors accountable. One implication to a human right approach to climate change is that there is a need to ensure access to essential **information and effective participation** (including the most vulnerable and affected people). On paper, promotion of information is encouraged. The ANDS promotes the 'right to access to environmental information', the 'right of public participation on environmental decision-making', and the 'right to challenge public decisions' that do not respect the

environmental law. However, some information is either not available, or difficult to access. For instance, despite NRVA, there are no indexes of vulnerability to climate change (or climate shocks). Yet, some variables can be derived from the database but access to NRVA databases are extremely restricted for the general public.

Thus, there are opportunities to support platforms that facilitate knowledge and data sharing among INGOs and Civil Society Organizations (CSO) and that advocate (to the Government) for more transparent access to information/data, including about measurements on performance on climate change, resilience of communities, etc.

- **Technology transfer** is critical to supporting sustainable development and avoiding the shifting of polluting industries from industrialized countries to the developing world. This is particularly relevant for Afghanistan which is increasingly looking for opportunities to provide energy to boost its economy and improve standards of living of its population. But information about low-emissions technologies in Afghanistan is usually scattered and difficult to access. There is a need not only to make this information easily available but also to organize the different success stories on green energy technologies in Afghanistan, so that it encourages demand.

Considering that women are often faced with difficulties when it comes to the general accessibility of financial resources and technologies, it is important facilitate their access to such resources in order to improve their ability to adapt to climate change impacts.

Civil society also has a role to play to ensure that a right-based approach is applied regarding technology transfer to help ensuring that beneficial technologies are fairly shared. It can help ensuring that technologies required by the most vulnerable people and communities is considered as a priority. This implies capacity and access to information.

Thus there are opportunities to facilitate knowledge sharing among INGOs and CSO around technology transfer.

- Access to **funding** is a critical aspect in tackling climate change. However, there is a general lack of awareness about funding mechanisms (e.g. the Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF) (both managed by the GEF); the Green Climate Fund (GCF) and the Adaptation Fund (AF) (under the Kyoto Protocol)). The civil society needs to be well aware of these avenues including for assessing the extent to which its government is making use of such opportunities.

In summary, with its experience in facilitating learning and information exchange platforms, HBS could play a very useful role in developing platforms that facilitate capacity building of CSOs. In a nutshell this platform would:

- Facilitate discussions around the various definitions, concepts and approaches related to climate change.
- Facilitate collective analysis of studies related to climate change (including on issues of vulnerability).
- Facilitate collective analysis of existing policies and programs, especially when it comes to the extent to which policies and programs are 'pro-poor' and the extent to which they follow a human right approach.
- Support knowledge and data sharing among INGOs and Civil Society Organizations (CSO) and advocate for access to information.
- Support knowledge sharing among INGOs and CSO around low emission technologies.
- Facilitate information sharing on funding mechanisms to support civil society initiatives in tackling climate change.

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ANNEXE: Policy, Plans & Legal Framework relevant to poverty reduction and adaptation to climate change

Policy, Plans & Legal Framework	Key Objectives
Afghanistan National Development Strategy (2008)	National vision for poverty reduction in Afghanistan. Vision to achieve the Millennium Development Goals (MDG) in Afghanistan. Environmental sustainability a vision for long-term development goals. Provides sectoral development strategy and sets priority programs.
Environmental Law (2007)	Umbrella law for environmental conservation and pollution control in Afghanistan. Mandates environmental assessment in major policy plans and projects. Mandates setting environmental requirements and ensures compliance. Protected Area concept for biodiversity conservation.
National Environmental Action Plan (NEAP) (2010)	Sets priority programs on air pollution and water pollution prevention and control. Priority actions for land, forests and rangeland management and biodiversity conservation. Priority cross-cutting action plans.
National Waste Management Policy	Promotes waste management hierarchy-avoidance; reduction; reuse; recycle and waste to energy; and safe disposal.
EIA Regulation	Defines procedures for environmental impact assessment of development projects to minimize the adverse environmental impacts and enhance the positive impacts of projects.
Clean Air Regulation	Requires environmental standards for both mobile and stationary sources of air pollution and compliance system. High level coordination mechanism.
National Adaptation Program of Action	Identified 51 different adaptation actions in seven thematic areas and prioritizes programs to address the climatic risks in Afghanistan.

<p>Disaster Management Act</p>	<p>An revised version of earlier act to incorporate risk reduction perspective as opposed to the earlier act's focus on post disaster relief and rescue activities. Requires government to mainstream DRR into regular planning process with clear sectoral roles and responsibilities. Establishes ANDMA as a national nodal body on DRM with clear roles and responsibilities.</p>
<p>National Disaster Management Plan (2010)</p>	<p>Clearly identifies roles and responsibilities of the NDMC and ANDMA along with its provincial committees and provincial offices, and associated line ministries, NGOs and international partners. Lays out operating procedures for risk reduction, response and recovery.</p>
<p>Strategic National Action Plan for Disaster Risk Reduction</p>	<p>Provides a road map to "A Safer and More Resilient Afghanistan" by addressing the risks of future disasters and climate change impacts in a cohesive way. SNAP seeks to utilize the convergence of DRR and climate change adaptation, and endeavors continuity of and consistency with the country's plans and programs.</p>
<p>Guidelines for the Use of National Emergency Fund</p>	<p>Guideline for the effective use of National Emergency Fund in meeting the immediate needs of communities affected by disaster of catastrophic scales. Fund separated into preparedness and risk mitigation activities.</p>
<p>Water Law (2009)</p>	<p>Adopted integrated water resources management and river basin management through multi-stakeholders platforms as the core concept of water resources management in Afghanistan.</p>
<p>Water Sector Policy</p>	<p>River basin and sub-basin approach. Promotes community participation in the management of water resources.</p>
<p>Framework Regulation for Water User Association</p>	<p>Legally mandates decentralization process Water Basin Council; Sub-basin Council; User Association. Establishes water rights for user association.</p>
<p>Rural Renewable Energy Development Policy (draft)</p>	<p>Promotes meeting rural energy through renewable sources. Economic incentives provisions for cleaner energy. Promotes community participation in rural energy development and distribution.</p>

Power Sector Master Plan	Primary focus on generation of power with different sources.
Gas Sector Master Plan	Primary focus on development of gas sector in Afghanistan.
National Agriculture Development Framework (2009)	Superseded and combined all previous strategic frameworks into a comprehensive inventory of key issues for agricultural development, divided into four main programmes (Natural Resource Management, Agriculture Production and Productivity, Economic Regeneration and Programme Support and Change Management.
Forest Law (2011)	Passed by the lower house but yet to be passed by the upper house. Promotes community based natural resources management.
Sustainable Rangeland Management Plan (draft)	Aims to provide both a framework and a road map for MAIL and its development partners to facilitate a comprehensive integrated approach to rangeland management.
Ozone Regulation (2007)	Legal provisions to phase out the ODS as per the Montreal Protocol.
Minerals and Hydrocarbon Law	Two laws (Mines Law and Hydrocarbon Law) which determine the ownership and control of the State over minerals and hydrocarbons, preservations, utilization, granting concessional rights, execution of contracts, exploration activities and developments and production of the oil and gas. Amendments to these laws is ongoing along with the relevant regulations for the sustainable development of mineral, and hydrocarbons.
Intended Nationally Determined Contribution (2015)	Documented submitted to the UNFCCC and which defines the target for reduction of GHG emissions and the associated financial needs.
Table 4: Policy, Plans & Legal Framework relevant to poverty reduction and adaptation to climate change Source: Updated from NEPA (2011) - Pages 48-49	

ANNEXE: Main programmes relevant to poverty reduction and adaptation to climate change

Leading organisation	Main Programmes
<ul style="list-style-type: none"> • UNEP: 	<p>Capacity building and institutional development program for environmental management.</p> <p>UNEP is building management capacity of the national institutions responsible for the environmental mandate, its activities and outputs will have a positive impact on improving compliance with the UNCCD.</p>
<ul style="list-style-type: none"> • ADB: 	<p>Poverty Reduction and Renewable Energy Development Project: Provided an initial inventory of Afghanistan’s greenhouse gases.</p>
<ul style="list-style-type: none"> • USAID: 	<p>Pastoral Engagement, Adaptation and Capacity Enhancement (PEACE) Project: Aimed to reduce the social and economic risks associated with livestock production in Afghanistan.</p>
<ul style="list-style-type: none"> • USAID & UN (FAO) 	<p>Agro Meteorological Project in Afghanistan (AgroMet): It provides climatic information, validation of satellite monitoring and ground truth crop forecasts.</p>
<ul style="list-style-type: none"> • UN (WFP): 	<p>World Food Programme (WFP)</p>
<ul style="list-style-type: none"> • EU: 	<p>National Risk and Vulnerability Assessment (NRVA) of Afghanistan: Collects information at community and household levels to better understand livelihoods of rural settled populations and nomadic pastoralists (Kuchi) throughout the country, and to determine the types of risks and vulnerabilities that they face throughout the year.</p>
<ul style="list-style-type: none"> • USAID: 	<p>Famine Early Warning Systems Network (FEWS Net): Aims to strengthen the abilities of foreign countries and regional organizations to manage risk of food insecurity through the provision of timely and analytical early warning and vulnerability information.</p>
<ul style="list-style-type: none"> • Catholic Relief Services (CRS) 	<p>Sustainable land management program: Aims at combining bio-physical watershed restoration activities with support for income generation and the provision of agricultural services.</p>

<ul style="list-style-type: none"> • ECODIT: 	<p>Biodiversity Support Program for NEPA (BSP/NEPA): Supports the building of institutional capital (human, financial and technical resources) for improved capacity to coordinate and monitor environmental management in Afghanistan.</p>
<ul style="list-style-type: none"> • ADB: 	<p>Rural Land Administration Project (RLAP): Concentrated on trialing new methodologies for community administration of rural land records, supporting the preparation of a comprehensive land policy, and developing recommendations for reform of relevant government institutions.</p>
<ul style="list-style-type: none"> • Wildlife Conservation Society (WCS): 	<p>Conservation activities in three geographical areas: the Wakhan Corridor, the Hazajat Plateau, and the Eastern Forest complex.</p>
<ul style="list-style-type: none"> • USAID: 	<p>Afghan Conservation Corps (ACC): Aims to generate long-term improvements in the livelihoods of the Afghan people through sustainable natural resource management, biodiversity conservation and environmental rehabilitation.</p>
<ul style="list-style-type: none"> • International Centre for Integrated Mountain Development (ICIMOD): 	<p>Biodiversity and Community Forestry Programme: Aims to strengthen the natural resource management sector by providing increased access to institutional and policy innovations from the Hindu Kush Himalayan region.</p>
<ul style="list-style-type: none"> • UN (World Food Programme): 	<p>Green Afghanistan Initiative (GAIN): Joint programme of the United Nations that aims to increase natural vegetation and forest cover, provide alternative sustainable livelihoods, increase environmental awareness through education, and build capacity at institutional and community levels.</p>
<ul style="list-style-type: none"> • UN (FAO) & World Bank 	<p>Emergency Irrigation Rehabilitation Project: Supports the rehabilitation and development of the agriculture and natural resource sector and assists the country towards becoming food secure and self-reliant.</p>

Table 5: Main programmes relevant to poverty reduction and adaptation to climate change

Source: Based on NEPA (2009) - Page 99

