



Farmers plating seeds in the Lesotho landscape. *Photo: Jeff Barbee*

LESOTHO CLIMATE ACTION REPORT

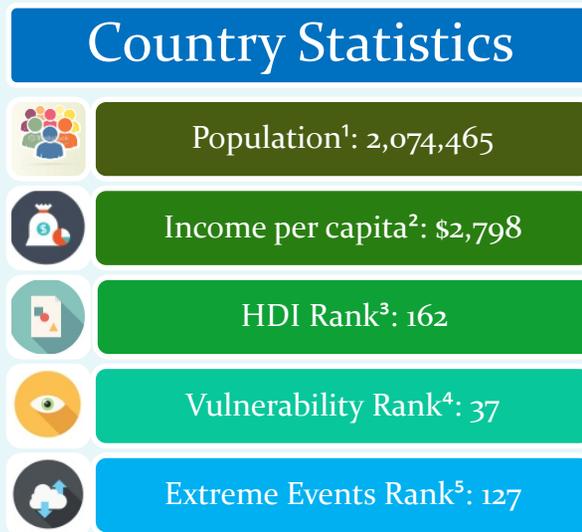
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COUNTRY CONTEXT

The mountain Kingdom of Lesotho is a landlocked country of 30,355 square kilometres with a population of almost 2.1 million. Climate change has already impacted the water sector in Lesotho whereby perennial springs have run dry and subsistence farming is in decline due to recurring droughts (MNR, 2007). Recent reports from the Ministry of Energy, Meteorology and Water Affairs (MEMWA), in Lesotho indicate that there has been a 0.7°C degree increase in seasonal mean temperature and there is a projected increase of 1.78-2.2°C degrees by 2060 in many areas of Lesotho (MEMWA, 2013).



Map of Lesotho, Irish Aid, 2015

1 (The World Bank, 2015)

2 (The World Bank, 2015)

3 (UNDP, 2015)

4 (GAIN, 2013)

5 (Kreft, 2015)

LESOTHO, CLIMATE CHANGE AND THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Lesotho is a member of the Least Developed Countries' (LDCs) Group. Lesotho holds a seat on the UNFCCC (Conference of Parties) COP Bureau and is a member of the LDC Expert Group (LEG).

RECENT CLIMATE TRENDS IN LESOTHO

Though average annual temperature is highly variable year to year, a significant increasing trend is observable. Over the period 1970 to 2000 the total temperature increase is 0.7°C (MEMWA, 2013). The National Adaptation Programme of Action (NAPA) of Lesotho also makes observations on recent climate change in Lesotho in 2007. Climate change had already impacted the water sector in Lesotho by 2007. Perennial springs have run dry, previously robust rivers have been greatly diminished and many dams remain dry for most of the year. Subsistence farming, a major source of living in rural areas, is in steady decline due to recurring droughts. This has led to a steep decline in production e.g. maize yields have fallen from 1,400kg per hectare to 450-500kg per hectare in 2007. Livestock farming has also been impacted with chronic drought limiting the carrying capacity of pastoral lands (MNR, 2007).

PROJECTIONS OF FUTURE CLIMATE IN LESOTHO

For the purposes of climate modelling, Lesotho was split into two regions, a northern and southern region with the northern region by far the larger area. Temperature was projected on an annual basis and rainfall on a seasonal basis. The average annual temperature for Lesotho is projected to increase by 1.78-2.2°C by 2060. Most scenarios show that rainfall in the northern region is projected to increase significantly in the March - May period up to 2100 with potentially noticeable changes already by 2050. A much smaller increase is projected by 2100 for the same season in the southern region. All the scenarios project decreases in rainfall for the Northern region over the June - August period by 2100 with changes potentially noticeable by 2040 (MEMWA, 2013).

ADAPTATION

As a Least Developed Country, Lesotho produced a National Adaptation Plan of Action (NAPA) in 2007 (MNR, 2007). The NAPA documents national circumstances, vulnerabilities, and expected impacts from climate change in Lesotho. The NAPA also outlines the consultations, resources and information that were used to prioritise adaptation interventions. Lesotho produced its Second National Communication (SNC) to the UNFCCC in November 2013. It includes country circumstances, greenhouse gas inventory,

impacts and vulnerability and national climate policies for mitigation, adaptation, research and observations, and public education (MEMWA, 2013).

The Lesotho economy is largely dependent on climate with water being a key economic sector both as an energy source and as an export to South Africa. Agriculture, though only 10% of GDP, provides subsistence for the majority of households. More than 95% of electricity consumed in Lesotho is from hydro-power (MEMWA, 2013). Climate change in Lesotho is expected to exacerbate existing environmental stresses such as drought, land degradation and loss of biodiversity and thus undermine sustainable development efforts. Lesotho can be divided into four distinct geographical regions with associated variation in typical livelihoods; the lowlands (17% of land area), foothills (15%), mountains (59%) and the Senqu river valley (9%). The Senqu river valley lowlands are the most vulnerable to climate change with a population of mostly peasant subsistence farmers, livestock farmers and destitute households with no means (MNR, 2007).

In agriculture, projected changes in rainfall by mid-century are expected to impact positively on yields of maize, sorghum and wheat, though increased incidence of fungal disease may offset this. The changes are expected to impact negatively on yields of crops such as beans, cucurbits and winter wheat. Increases in temperature in the southern region are expected to impact negatively on agricultural productivity. Soil quality and livestock productivity is expected to be negatively impacted through changes in the hydrological cycle causing dry spells, droughts and flash floods. This will lead to reduced grass and vegetation cover due to a shortened growing season, thus also affecting soil moisture content and increasing soil erosion (MEMWA, 2013).

As part of the process to develop its NAPA, Lesotho conducted participatory vulnerability assessments and stakeholder consultations to identify, screen and prioritise adaptation options. Eleven adaptation projects for Lesotho were identified by the NAPA and ranked in order of priority as follows:

1. Improve Resilience of Livestock Production Systems Under Extreme Climatic Conditions in Various Livelihood Zones in Lesotho
2. Promoting Sustainable Crop Based Livelihood Systems in Foothills, Lowlands and the Senqu River Valley
3. Capacity Building and Policy Reform to Integrate Climate Change in Sectoral Development Plans
4. Improvement of an Early Warning System Against Climate Induced Disasters and Hazards
5. Securing Village Water Supply for Communities in the Southern Lowlands
6. Management and Reclamation of Degraded and Eroded Land in the Flood Prone Areas (Pilot Project for Western Lowlands)

7. Conservation and Rehabilitation of Degraded Wetlands in the Mountain Areas of Lesotho
8. Improvement of Community Food Security Through the Promotion of Food Processing and Preservation Technologies
9. Strengthening and stabilizing eco-tourism based rural livelihoods
10. Promote Wind, Solar and Biogas Energy Use as a Supplement to Hydropower Energy
11. Stabilizing Community Livelihoods which are Adversely Affected by Climate Change Through Improvement of Small Scale Industries (MNR, 2007)

At time of publication of the SNC in 2013, priorities (3) and (4) were under implementation through a project entitled “Improvement of Early Warning System to Reduce Impacts of Climate Change and Capacity Building to Integrate Climate Change into Development Plans (IEWS)” which started in 2011.

RESOURCES:

IPCC 5th Assessment Report (2014); Working Group II Impacts, Adaptation and Vulnerability: <http://ipcc-wg2.gov/AR5/> [Accessed 18 July 2014].

McSweeney, C., New, M. & Lizcano, G. (2010); UNDP Climate Change Country Profiles: South Africa. <http://country-profiles.geog.ox.ac.uk> [Accessed 18 July 2014].

Ministry of Energy, Meteorology and Water Affairs, Lesotho (2013); Second National Communication of Lesotho to the UNFCCC; <http://unfccc.int/resource/docs/natc/lsonc2.pdf> [Accessed 18 July 2014].

Ministry of Natural Resources, Lesotho (2007); National Adaptation Programme of Action (NAPA); <http://unfccc.int/resource/docs/napa/lsoo1.pdf> [Accessed 18 July 2014].

LESOTHO'S INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC)

Lesotho's INDC reports on the nature of Lesotho's development trajectory between 2020 and 2030 and the potential greenhouse gas emissions reductions. Recognising that Lesotho is highly vulnerable to the impacts of climate change, it has also reported on adaptation in line with the collective position of the Africa Group.

Mitigation: According to Lesotho's INDC, GHG emissions are minimal due to its predominant dependence on hydropower with a grid emission factor of 0.0038 tCO₂/GWh. The proportional contribution of Lesotho's three key sectors is agriculture (63%), energy (31%) and waste management (6%). The main opportunities for mitigation consist of energy efficiency and demand management, coupled with increasing investment in renewable energy programmes in the electricity, buildings (construction) and waste sectors. Lesotho is committed to reduce unconditionally 10% of its GHG emissions by 2030 compared to a Business-as-usual (BAU) scenario. The BAU emissions represent projected future emissions in the absence of further climate policies or other measures. It reflects assumptions about e.g. population growth and economic development. The conditional target is 35% by 2030.

Adaptation: Lesotho has not yet developed an official National Adaptation Plan (NAP). However, its National Adaptation Plan of Action (NAPA) has been developed and is presented in the INDC as the best indication of the nation's intentions for adaptation in the future. Adaptation programmes focus on: crop production and cropping systems livestock production and livestock systems, forest and land rehabilitation programs, wetlands and watershed management and climate change adaptation projects.

Monitoring and Evaluation: Lesotho's climate change adaptation process will be monitored using the following indicators: change in the level of vulnerability; number of people benefiting from adaptation activities; degree of integration of climate change adaptation into sectoral policies and plans; resources spent on adaptation to reveal the climate relevant share of the total public expenditure over time. Proper implementation of the monitoring and evaluation commitment is conditional on enabling finance.

Fairness, equity and ambition: Lesotho's INDC is an ambitious, fair and responsible contribution to global efforts toward meeting the objective of the UNFCCC with the goal of limiting global average temperature rise to below 2°C. Lesotho submitted their nationally intended contributions as a fair and equitable commensurate to their national circumstances especially its low GDP per capita (≈ US\$1,126) and the level of dependence on external support.



Farmers in Lesotho. *Photo: Jeff Barbee*