

GLOBAL INFORMATION SOCIETY WATCH 2020

*Technology, the environment and
a sustainable world: Responses from
the global South*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)
AND SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY (SIDA)

Global Information Society Watch 2020

Technology, the environment and a sustainable world: Responses from the global South

Operational team

Valeria Betancourt (APC)

Alan Finlay (APC)

Maja Romano (APC)

Project coordination team

Valeria Betancourt (APC)

Cathy Chen (APC)

Flavia Fascendini (APC)

Alan Finlay (APC)

Leila Nachawati (APC)

Lori Nordstrom (APC)

Maja Romano (APC)

GISWatch 2020 advisory committee

Shawna Finnegan (APC)

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Jennifer Radloff (APC)

Chat García Ramilo (APC)

Leandro Navarro (Pangea, Universitat Politècnica de Catalunya - UPC)

Arun M. (SPACE Kerala)

Florencia Roveri (Nodo TAU)

Y. Z. Yaú (CITAD)

Joan Carling (Indigenous Peoples Rights International)

Project coordinator

Maja Romano (APC)

Editor

Alan Finlay (APC)

Assistant editor and proofreading

Lori Nordstrom (APC)

Publication production support

Cathy Chen (APC)

Graphic design

Monocromo

Cover illustration

Matías Bervejillo



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CAMEROON

THE NECESSARY ASSISTANCE FROM THE COUNTRIES OF THE NORTH TO HELP CURB THE HARMFUL EFFECTS OF GLOBAL WARMING IN CAMEROON



PROTEGE QV

Serge Dafo, Emmanuel Bikobo and Avis Momeni
www.protegeqv.org

Introduction

As anticipated by the National Observatory on Climate Change¹ in its seasonal bulletin, Cameroon experienced excess rainfall both in June and July 2020. In addition to these heavy rains, the Observatory had also predicted landslides and cholera cases in several regions of the country. These are some of the manifestations of extreme weather events that the country is facing as a result of climate change.

With its 475,000 square kilometres, Cameroon lies in the heart of West Central Africa and prides itself for containing within its territory all the natural resources which are dispersed throughout the rest of the continent. In addition to this, all of Africa's major climates can also be found in the country. Yet, its 27 million inhabitants² are facing a major threat: the worldwide climate and environmental emergency.

Arguably, Africa is the continent most vulnerable to climate change. Fortunately, information and communications technologies (ICTs), which are a cross-cutting technology, hold the potential to address climate change by helping countries to adapt to its effects, and to mitigate its impact.

This report outlines challenges posed by climate change in Cameroon and existing ICT initiatives that aim to address them. The analysis is based upon a review of literature and data and supported by the interview of a key governmental official.

1 The National Observatory on Climate Change was established in 2009 to help seek solutions to the negative impacts of climate change affecting the agriculture, transport, industrial and other sectors. It produces regular bulletins with forecasts on seasonal climatic conditions to facilitate adaptation activities in the different sectors of the economy. <https://onacc.cm/about>

2 <https://www.worldometers.info/world-population/cameroon-population>

The national context

As outlined by the Cameroonian head of state in an open forum titled "Time for Action"³ shortly before the 2015 United Nations Climate Change Conference in Paris (COP21), the context of this report is a context of climate emergency. Cameroon is facing an environmental crisis that is likely to profoundly affect its ecosystems and economic sectors (such as agriculture, forestry and tourism) as well as infrastructures (dams, roads, water and sanitation) and areas related to human development (such as health, education, employment).

Legislative and regulatory framework

Cameroon has ratified more than 23 international agreements in the fields of forests and the environment.⁴ Among the conventions ratified by the country are:

- The United Nations Framework Convention on Climate Change (UNFCCC) (1994)
- The Brazzaville Treaty on the Conservation and Sustainable Management of Forest Ecosystems in Central Africa (2005).

With respect to climate change, Cameroon is party to the following agreements and protocols:

- The Paris Agreement (2016)⁵
- The Kyoto Protocol (2002).⁶

The country also has a number of laws and regulations on the environment and sustainable development. The following laws, decrees and orders are worth mentioning:

3 <https://www.prc.cm/fr/actualites/discours/1568-tribune-libre-du-chef-de-l-etat-s-e-paul-biya>

4 <http://www.transparenceforestiere.info/cameroon/2010/themes/3/16>

5 The Paris Agreement is an agreement within the United Nations Framework Convention on Climate Change dealing with greenhouse gas emissions mitigation, adaptation and finance. https://en.wikipedia.org/wiki/Paris_Agreement

6 The Kyoto Protocol is an international treaty which extends the 1992 United Nations Framework Convention on Climate Change that commits state parties to reduce greenhouse gas emissions, based on the scientific consensus that (part one) global warming is occurring and (part two) it is extremely likely that human-made CO₂ emissions have predominantly caused it. The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. https://en.wikipedia.org/wiki/Kyoto_Protocol

- Law No. 96/12 of 5 August 1996, or the framework law on environmental management; this law lays down the general legal regime for environmental management in Cameroon.
- Law No. 2016/008 of 12 July 2016, authorising the President of the Republic to ratify the Paris Climate Agreement adopted in Paris on 12 December 2015 and signed in New York on 22 April 2016.
- Decree No. 2004/320 of 8 December 2004, creating the Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED). The creation of this ministry is linked to the desire of the government of Cameroon to work effectively in the creation of a healthy environment for the well-being of the population as a whole. To this end, the mission of the ministry is to develop, implement and monitor environmental policy and mechanisms aimed at the protection of nature in Cameroon.⁷
- Order No. 100/PM of 11 July 2006, creating an interministerial committee on the environment. The purpose of this committee is to facilitate the implementation of the sectoral programme on forests and the environment.

However, these texts are almost all related to the management of natural resources, such as the law on the environment, the law on forests and the laws on water, mines, and gas. In comparison, the actual regulatory framework for dealing with climate change looks a bit sketchy:

- In 1999, Cameroon developed its First National Communication marking its accession to the UNFCCC.
- Decree No. 2009/410 of 10 December 2009, creating the National Observatory on Climate Change, well known under the French acronym ONACC. *Inter alia*, the Observatory has to collect, analyse and make available the reference data on climate change in Cameroon to public and private decision makers as well as various national and international bodies.
- June 2015 saw the adoption of the first National Adaptation Plan for Climate Change (NAPCC). The primary objectives of the NAPCC are to reduce carbon emissions to slow down global warming, and to implement climate change adaptation measures to minimise the damage of unavoidable climate-related disasters.

Cameroon's bleak climate change outlook

Cameroon is a resource-rich country heavily dependent on revenues generated from oil, timber and agricultural products⁸ for continued development at both local and national levels. Therefore, the country is highly vulnerable to the impacts of climate change. Cameroon is divided into three main climatic zones:

- The equatorial zone which extends from the second to the sixth degree North latitude. It is characterised by abundant rainfall reaching an annual average of 2,000 mm of rainfall. The average temperature is around 25° Celsius.
- The Sudanian zone extends from the seventh to the tenth degree North latitude. The dry season here lasts five to six months. The average temperature is 22° Celsius, and 1,000 mm of rainfall is observed during the year.
- The Sudano-Sahelian zone, which extends beyond the tenth degree North latitude. It is characterised by a seven-month dry season and low rainfall.

However, the climate changes observed in the country have made predicting trends more complex, and only regular weather measurements at observation posts can provide reliable data on climatic conditions.

For Cameroon, agriculture is important. The agriculture and forestry sectors provide employment for the majority of the population. About 80% of the country's poor live in rural areas and work primarily in agriculture. About 35% of Cameroon's GDP comes from agriculture and related activities. The agricultural system is highly dependent on the climate, because temperature, sunlight and water are the main drivers of crop growth.⁹ Therefore, the effects of global warming and climate change on the agricultural sector are likely to threaten both the welfare of the population and the economic development of the country. Furthermore, the country's susceptibility to weather pattern changes could be extended to sectors like forestry and tourism, as well as to infrastructures (dams, roads, water and sanitation), and areas related to human development (such as health, education and employment).

⁸ Norrington-Davies, G. (2011). *Climate Change Financing and Aid Effectiveness: Cameroon Case Study*. OECD/DAC & African Development Bank. <https://www.oecd.org/environment/environment-development/48458409.pdf>

⁹ Molua, E. L., & Lambi, C. M. (2007). *The Economic Impact of Climate Change on Agriculture in Cameroon*. World Bank. <https://openknowledge.worldbank.org/handle/10986/7362>

⁷ <https://minepded.gov.cm/en>

TABLE 1. Use of ICTs to confront climate change in Cameroon	
Action	ICT tools used
Environmental observation, climate monitoring and climate change prediction	A fairly well-structured national hydrometric network made up of hydrometric stations distributed over the five major river basins in Cameroon (Lake Chad, Niger, Sanaga, Congo and Nyong and Coastal Rivers). It also relies on the Global Observing System of the World Meteorological Organization.
Data processing systems	The software for computer processing of hydro-pluviometric data (TIDHYP) developed at the Centre de Recherche Hydrologique is used. Statistical software such as HYFRAN and other software (XlStat, Excel, KhronoStat, etc.) is necessary for modelling and/or forecasting.
Research and development activities	Use of satellite images (raw images and products derived from the AMESD/ MESA programme of the Meteosat Second Generation satellite). Use of remote sensing software and geographic information systems (GIS).
Installation of pyranometers	In 2011 the Laboratoire de Recherches Énergétiques proceeded with the installation of pyranometers. The objective is to monitor the impact on the climate by collecting measurements for solar radiation, air humidity, rainfall, wind direction and speed, barometric pressure, as well as ultraviolet radiation.
Climate change and integrated waste management	An ICT tool for assessing waste flows and types is used here by the ONACC. The software is provided by the Intergovernmental Panel on Climate Change (IPCC).

The frequency of extreme weather conditions across the country, “false starts” to seasons, the recent deadly floods due to heavier rainfall (2013, 2015 and 2017 in the Far North region), and recurrent droughts that have scorched large expanses of land allowing the desert to advance, have already resulted in the migration of local populations in search of water and arable land. The same applies to fishers and herders who have also migrated to other areas after being affected by shortened rainy seasons and an increase in temperature.

There have also been landslides and mudslides, particularly in Bafaka and Limbe (in the South West region, in 1997, 1998, 2001 and 2003), and in Yaounde (in the central region, in 1998 and 2019).

As temperatures continue to rise, these impacts of climate change are expected to become more profound throughout the country. Average annual temperatures are predicted to increase between 1.5°C and 4.5°C by 2100 with a 1.6°C to 3.3°C rise in coastal zones and a 2.1°C to 4.5°C rise in the Sudano-Sahelian region.¹⁰ Therefore, it is essential that Cameroon increase its capacity in all areas, particularly human and technical capacity to respond. This will necessarily involve the use of ICTs.¹¹

Cameroon’s responses to global warming through the use of ICTs

ICTs encompass devices and services that enable the reception, transmission and display of data and information in electronic form, and are part of the solutions for adapting to and mitigating the effects of climate change. This is a key challenge to a country such as Cameroon. Do we have the necessary infrastructure, financial and human capacity to cope with global warming using ICTs?

As the president stated prior to COP21: “For a country like Cameroon, the reduction of greenhouse gases remains conditional on support from the international community [...] in the form of financing, capacity building and technology transfer.”¹²

Table 1 outlines the technology-related infrastructure in place in Cameroon to tackle the harmful effects of the climate change.

Conclusion

Observed changes or expected changes to the climate and weather are a matter of great concern in Cameroon, but the country seems to have low adaptive capacity that is further compounded by the poor connections between different levels of government and the various communities. Climate change is exacerbating already entrenched poverty which prevails at the grassroots level. Because of

¹⁰ Norrington-Davies, G. (2011). Op. cit.

¹¹ Interview with Dr. Joseph Armathé Amougou, director general of the National Observatory on Climate Change (ONACC). <https://onacc.cm>

¹² <https://www.prc.cm/fr/actualites/discours/1568-tribune-libre-du-chef-de-l-etat-s-e-paul-biya>

this, the contribution of ICTs is necessary to try to reverse this trend, as is called for in the Bali Action Plan. But the limited financial resources in the country make both adaptation and mitigation through the use of ICTs extremely difficult. As a result, multifaceted assistance from industrialised countries will be more than welcome for Cameroon.

Action steps

The following steps are a priority in Cameroon:

- Make the fight against global warming one of the top concerns of both the government as a whole and the ministry in charge of the environment (MINEPDED). So far this is not the case, as global warming does not even feature in their priorities. This would include the government taking climate change into account in its operational policies.
- Strengthen coordination between the various ministries and bodies in charge of the environment in Cameroon. This weak coordination is at the heart of the failure to take climate change into account in the multi-sectoral forest and environment committee created in 2006.
- The country must upgrade its nearly 31 climatological stations and 400 rainfall stations, allowing them to play a much more effective role in monitoring the weather.
- The capacities of the different actors in the fight against climate change must be strengthened for better understanding and use of monitoring data.
- ICTs should be embraced through technology transfer as a means of climate change adaptation and mitigation, as called for in Article 4.5 of the UNFCCC.

Technology, the environment and a sustainable world: Responses from the global South

The world is facing an unprecedented climate and environmental emergency. Scientists have identified human activity as primarily responsible for the climate crisis, which together with rampant environmental pollution, and the unbridled activities of the extractive and agricultural industries, pose a direct threat to the sustainability of life on this planet.

This edition of Global Information Society Watch (GISWatch) seeks to understand the constructive role that technology can play in confronting the crises. It disrupts the normative understanding of technology being an easy panacea to the planet's environmental challenges and suggests that a nuanced and contextual use of technology is necessary for real sustainability to be achieved. A series of thematic reports frame different aspects of the relationship between digital technology and environmental sustainability from a human rights and social justice perspective, while 46 country and regional reports explore the diverse frontiers where technology meets the needs of both the environment and communities, and where technology itself becomes a challenge to a sustainable future.

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2020 Report

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