

UGANDA



Population: 29,593,000 (2008)

Source: Demographic Yearbook 2008,
Table 5 Estimates of mid-year population: 1999-2008
<http://unstats.un.org/unsd/demographic/products/dyb/dyb2008.htm>

Carbon emissions per country: 2007: 3,205 Source: (CDIAC) Carbon dioxide emissions (CO₂), thousand metric tons of CO₂ <http://unstats.un.org/unsd/mdg/SeriesDetail.aspx?srid=749&erid=>

Carbon emissions per capita: 2007, Uganda: 0,1046

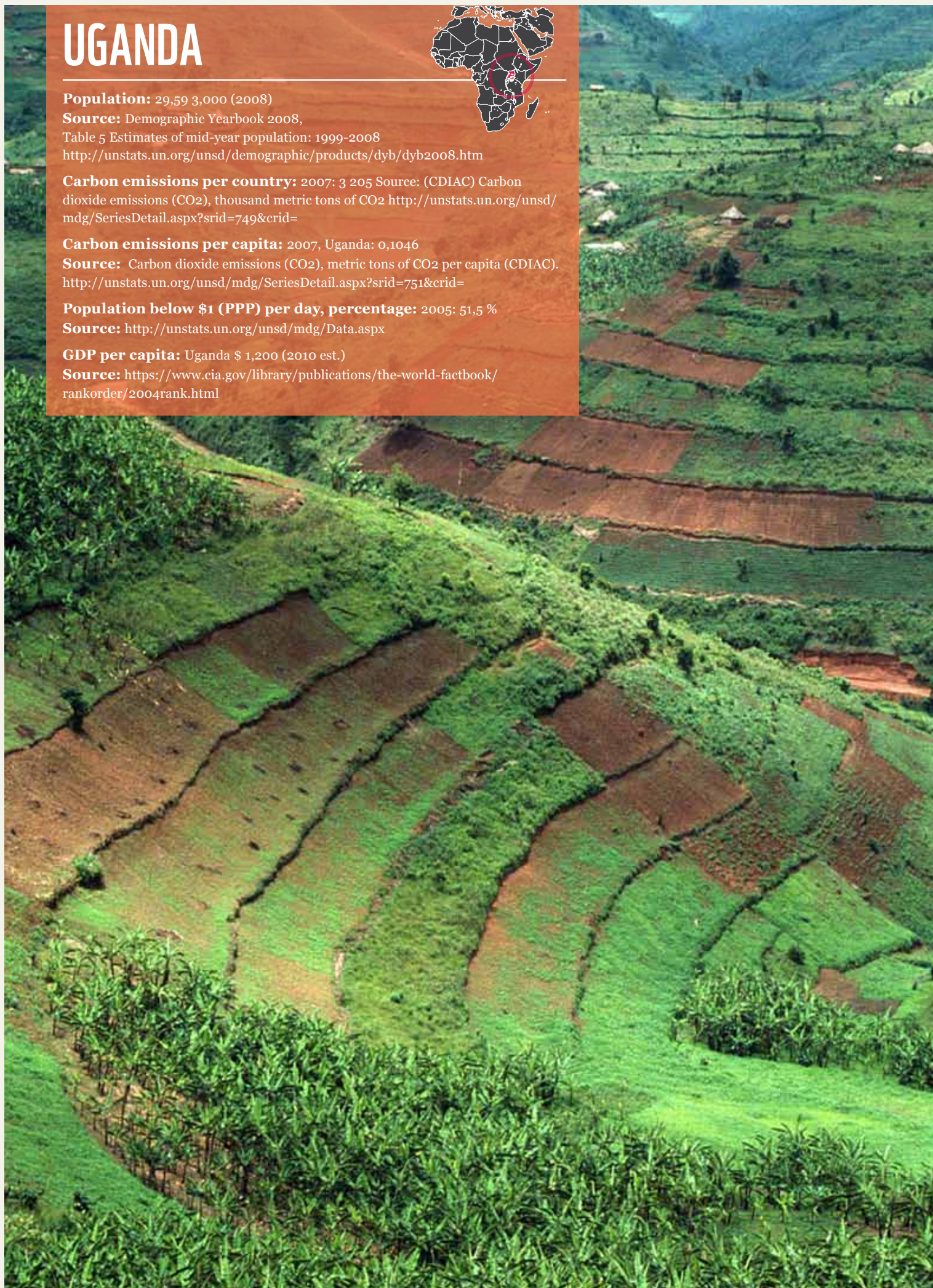
Source: Carbon dioxide emissions (CO₂), metric tons of CO₂ per capita (CDIAC).
<http://unstats.un.org/unsd/mdg/SeriesDetail.aspx?srid=751&erid=>

Population below \$1 (PPP) per day, percentage: 2005: 51,5 %

Source: <http://unstats.un.org/unsd/mdg/Data.aspx>

GDP per capita: Uganda \$ 1,200 (2010 est.)

Source: <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html>





UGANDA

This section on Uganda constitutes to a large extent an extract and analysis of the WWF-commissioned national review titled “Climate Innovation and entrepreneurship research,” produced by Makerere University, Innovation Systems Cluster Program-Uganda in 2011. More elaborate description and analysis of Uganda’s national climate innovation system can be found in the full report at www.climatesolver.org.

The increasing degradation of natural resources coupled with increasing climate variability and climate change is beginning to have serious negative impacts on the social and economic development in Uganda and the livelihoods of millions of its people. This situation is also threatening the success of the Millennium Development Goals. The effects of climate change are experienced in the form of floods, increasing temperatures, drought, reduced food production, water scarcity, and a drop in water levels in major water bodies used to produce hydroelectricity (Uganda’s major source of electricity). Given this and the predicted future climate situation in Uganda, it is vital that the implementation of sustainable climate innovations for adaptation and mitigation is increased. To achieve this, it is important to encourage entrepreneurship.

An array of innovations, both local and foreign, has been developed, and entrepreneurs have been compelled to invest in climate change businesses, which sell climate innovations to the public. However, most of the people who are meant to use these innovations have not yet understood climate change and the relevance of these solutions, which of course has a large effect on the demand for such solutions. There is a serious need for support by the government for effective dissemination of information, for appropriate policies as well as for financial support to innovations and businesses.

The Climate Innovation System in Uganda

The role of the Government

In 2007 a Renewable Energy Policy for Uganda was established along with the government’s Policy Vision for Renewable Energy which is “to make modern renewable energy a substantial part of the national energy consumption.” The overall policy goal is “to increase the use of modern renewable energy, from the current 4% to 61% of the total energy consumption by the year 2017.” To realize these policy objectives, various strategies have been elaborated and translated into policy actions in the form of specific programs within the areas of energy generation, energy services, biofuels, and energy efficiency.

The Ministry of Agriculture has developed some drought and flood tolerant crops that are currently used by farmers. More crops are being developed through its research arm National Agricultural Research Organization (NARO). Through NARO the ministry has also developed different water harvesting, storage, and



PHOTO: © WWF-CANON / SIMON RAWLES

Tree planting programs are part of Uganda's response to climate change.

irrigation technology innovations. NARO disseminates the research information through National Agriculture Advisory Services (NAADS) to the farmers. However, dissemination of this information is neither wide nor efficient enough. There is, therefore, a need to improve and strengthen the dissemination channels of the available research to improve farmers' awareness of available information.

Entrepreneurs and the private sector

Entrepreneurship in climate innovations is still new in Uganda. Although the need is obvious, the demand for these products is still low and the materials/products are still expensive. Companies selling climate innovations need a lot of support to be able to stay in business and to increase their market share. They need technical support, both in the form of training and machinery, financial support to engage in more research and to improve performance, business skills to position their businesses better, as well as support in the form of community awareness of climate change and its effects. A study where climate entrepreneurs were asked about the type of support they had received to boost their businesses, shows that the level of support to climate entrepreneurs is still low. Out of the targeted businesses 57% responded that they hadn't received any support at all.

One example of existing governmental support is the Ministry of Energy's work promoting and working with businesses that are Promoters of Efficient Technologies for Sustainable Development (PETSd). An example of products promoted is a new models of efficient stoves used for commercial purposes.

However the government would need to increase its support, reduce taxes on climate products like irrigation systems, energy-saving products, efficient technologies and solar products. If these products continue to be highly priced due to high taxes,

their future potential is at risk, given the low income levels of a majority of people of Uganda. The government offers some support, e.g. subsidies on solar loans, and they support famers in acquiring irrigation systems. This has helped some famers, but only a few can benefit at the same time due to financial constraints. Lowering taxes on these products would lead to great improvements in the climate innovation business.

Most of the businesses that are manufacturing in Uganda do their work manually. This is obviously something that affects efficiency in production, and the quality of

the products. Because of manual production the demand is sometimes higher than the supply. With increased automation and relevant machinery, production and business could be substantially improved.

The entrepreneurs express a great need for development partners and government to fund research in order for them to improve their products and to develop new innovations. Supporting the research of climate entrepreneurs is important, and the fact that they work on the ground, means that they are well suited to identify research needs, and gather feedback from consumers. Their research is therefore focused on the real needs of the community, resulting in the development of innovations that are relevant to current needs.

The biggest challenge all the entrepreneurs face is that a majority of the population has not yet understood the concept of climate change. It follows then that people don't see why they would need climate innovations. Climate entrepreneurs believe that until people have a better understanding of climate change - how it affects their livelihood, how some traditional methods contribute to increased climate change effects - people will not find climate innovations relevant.

A good marketing strategy for these businesses in Uganda has proven to be demonstrations allowing people to see the practicality of a particular innovation.

However, this type of marketing is resource

intensive and requires support in order to be carried out effectively. It could for example be done with the help of civil society organizations regularly meeting with the community

Knowledge Institutions

Just one-fourth of the approached higher institutions of learning in Uganda were engaged in any kind of climate change research. Some of this research has generated innovations for climate change adaptation and mitigation. The universities engaged in climate research were all government Universities. The private universities approached had no climate-focused research. This shows that although climate change has become a major threat, academia in Uganda has not given it the required



Drought and flood resistant crops are important for Uganda in adapting to climate change.

attention to ensure that its effects are reduced or prevented. Consequently there is a need to get academia more involved in climate change research and innovations.

Of the climate innovations developed at the institutional level there are many in the areas of energy, water harvestings, seeds, and pest control, among others. However, the challenge is that most of this research has not yet been developed into business. Out of these climate innovations few (5%) are actually disseminated to business. This is due in part to the limited collaboration that exists between businesses and knowledge institutions. The focus on climate innovations is still small and there is a real need to promote them and to encourage businesses to engage in climate innovation with the support of knowledge institutions.

There are however some examples of knowledge institutions cooperating with business. The Centre for Energy and Energy Conservation (CREEC) has established a link with businesses by training people how to make and use the innovations. However, this collaboration needs to be strengthened and supported to ensure that the approved innovations are being translated into business. Another example is the Innovations Systems and Cluster Program-Uganda, an outreach project with the aim to increase competitiveness of businesses using the triple helix concept that allows business, academia, and government to collaborate to improve the competitiveness of businesses. Businesses doing similar work form clusters and work together, with a secretariat to guide them and provide linkages as well as training to enable better performance. Out of the 30 clusters in the program, three are involved in climate businesses

Non-governmental Organizations

Civil society organizations in Uganda play an important role in disseminating information to the community and identifying innovations which they train the community to use. Today the collaboration of businesses with civil society organizations is poor, yet these organizations are the ones that have contact with the community. All businesses interviewed stated that there is still a knowledge gap among the people, as they have not yet understood climate change, these innovations, how they work or how they benefit the people and the community. Facing this challenge, businesses cannot afford to work alone to promote the innovations. They need to develop a strong collaboration with civil society organizations to create awareness about available climate innovations.

The National Association of Professional Environmentalists (NAPE) and its partners have launched an awareness campaign about climate change. NAPE identifies innovations, promotes them and trains people in how to use them.

Challenges and Recommended strategies

Strengthening systems for knowledge development and information-sharing

Uganda has a great number of climate innovations, both local and foreign. There are also many at the research phase in knowledge institutions. These innovations are related to mitigation and adaptation to climate change for example, drought-resistant seed and crop varieties, water harvesting, irrigation and energy systems, tree planting, climate change monitoring, energy efficiency, and energy-saving technologies. However there is a need for better dissemination of the findings, and for transforming innovations into business. The link between business and knowledge institutions thus needs to be strengthened. Due to the technical nature of business this link is very important and development partners can facilitate this process.

A big challenge is awareness raising, to make people understand the causes and effects of climate change and hence the relevance of climate innovations. In order to reach individual customers, businesses in Uganda mainly rely on support organizations. Development partners, civil society organizations and businesses can work together to create awareness about climate change and the innovations available to mitigate climate change or adapt to it.

Building capacities and increasing resources

Support to climate change entrepreneurs - i.e. technological support, marketing, financial support for research - is still very limited in Uganda, yet the entrepreneurial focus is still young. The entrepreneurs are struggling to break through to the market. The marketing models are still not well established, and most of them are relying more on development partners, government, and civil society clientele. The entrepreneurs need to develop sustainable marketing models to appeal to the general public and thus create a demand from individual customers rather than being dependent on support organizations.

Climate entrepreneurs need to be supported in form of machinery, technical training to improve skill and quality of products, financial support for research, and business skills, including development of marketing and business models leading to financial viability.

Establishing an enabling institutional framework

Although Uganda has developed some supporting policy frameworks, for example the Renewable Energy Policy, these frameworks are not yet fully implemented. Therefore they do not adequately address the issues of climate innovations, support, and dissemination of climate innovations at entrepreneurship level. There is yet no overall climate change policy in place, thus no policy framework through which the National Adaptation Plans are being implemented, something that negatively affects entrepreneurs.

The authors of “Climate Innovation and entrepreneurship research” recommend the Ugandan government to reduce the taxes charged on climate products and raw materials. The government has launched a scheme where it partners with financial institutions to provide solar loans based on a 30% government subsidy.. The scheme is appreciated as it has increased the use of solar energy, but not everyone who wants to use solar is interested in taking loans. Therefore it is recommended that taxes be lowered which would reduce prices and make it more affordable to acquire solar panels.

The Renewable Energy Policy has no specific focus on promoting entrepreneurs in renewable energy. However, the Ministry of Energy and Mineral Development is trying to support businesses in renewable energy through a private-sector foundation to write business plans, feasibility studies, and fundraising activities. This has provided useful support to energy entrepreneurs. It is recommended that the Climate Change Policy that is being developed by the Ministry of Water and Environment and the Climate Change Unit, focus on climate entrepreneurs and how they will be supported in the implementation of the climate change adaptation plans, as well as other climate change interventions.

Establishing a national platform for coordination and information exchange

In Uganda, the issue of climate change in general has not been given the due focus it deserves. Its effects are devastating, but compared to other issues like HIV/AIDS climate change has not been well prioritized. All stakeholders including government development partners, civil society organizations, academia,



A wide range of innovations are being developed and tested in Uganda, such as solar cookers.

the private sector, and individuals need to give climate change the focus and attention it deserves.

The collaboration between businesses and government in Uganda needs to improve. The ministry which has most collaboration with business is the Ministry of Energy and Mineral Development. This collaboration would need to be strengthened and include technical support and research. The biggest collaboration for businesses is with development partners. For example, GIZ (formally GTZ) works with businesses to promote renewable energy, mainly through contracting them to offer services. UNIDO through the Uganda Cleaner Production Centre is supporting companies to adopt energy saving and efficient technologies to reduce emissions and deforestation. However, there is need for development partners to support businesses in acquiring machinery to increase efficiency and production, engage in the necessary research, and increase awareness for their products in order to increase market demand.

Some climate innovations - like energy-saving technologies - have been promoted by civil society organizations, but very few of these organizations are working in this way with businesses. The collaboration between businesses and civil society organizations is still very weak. Yet if strengthened, it could facilitate the sale and implementation of climate innovations.