



REPUBLIC OF KENYA

## Mainstreaming Kenya's National Climate Change Action Plan into the Science, Technology and Innovation Sector

**Introduction:** Kenya Vision 2030 recognises the role of science, technology and innovation (ST&I) in a modern economy, in which new knowledge plays a central role in wealth creation, social welfare and international competitiveness. The role of technology and innovation in environment and natural resource management is recognised in Kenya's Science, Technology and Innovation Policy and Strategy of 2009. The policy states that *"alternative technologies will be explored to conserve and manage Kenya's natural resources to harness maximum benefits from environment and natural resources and protect the livelihoods of Kenyans. This will be accomplished through, capacity to acquire cleaner technologies and ST&I programmes identified and implemented to manage natural resources and enhance predictive capabilities and preparedness for responding to emergencies arising from epidemics, volcanic eruptions, floods, climate change, earthquakes drought and famine among others."*<sup>1</sup>

**Technology and Innovation in Climate Change Responses:** Technology and innovation are central for addressing environmental problems. Applying modern technologies to better cope with climate variability is not new to our country. Technology developments have helped Kenya cope with climate variability in the past, and new technologies will help Kenya move toward a low carbon climate resilient development pathway. Examples of such technologies include geothermal electricity generation; wind power generation; energy-efficient light bulbs such as compact fluorescent lights; landfill methane capture; solar (photovoltaic, thermal); improved cook stoves; drought tolerant crop varieties (such as drought-tolerant sorghum developed by the Kenya Agricultural Research Institute [KARI]); conservation agriculture; drip irrigation technology for arid and semi-arid regions; and water harvesting technologies, among others.

Technology development and transfer is discussed in the international climate change negotiations. A Technology Mechanism, established under the United Nations Framework Convention on Climate Change in 2010, is expected to facilitate technology development and transfer to developing countries to support action on mitigation and adaptation to climate change.<sup>2</sup> The National Climate Change Action Plan (NCCAP) identifies the main issues for Kenya related to technology transfer and development in the climate change negotiations:

- Promotion, facilitation and financing, as appropriate, access to and the development, transfer and diffusion of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including concessional and preferential terms, as mutually agreed.
- Creation of an enabling environment for the development, transfer and diffusion of environmentally sound technologies, especially with regard to policy and legal instruments. Kenya does not have specific policy or legislation on transfer and diffusion of technologies, but there are references made in sectoral policies and legislation such as the Environmental Management and Coordination Act (1999); National Climate Change Response Strategy (2010); Energy Policy (2004) and Act (2006) promoting geothermal and renewable energy technologies; Forest Act (2005) promoting community-driven technologies; and various Finance Acts that provide incentives for cleaner production and renewable energy generation technologies.
- Enhancement of foreign direct investment, international trade and international cooperation to support the transfer of environmentally sound technologies.
- Support for developing countries to undertake Technology Needs Assessment, and to identify options to address the needs and associated capacity building.



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- Strengthened international, regional and national capacities in cooperative action in research and technology assessment and issues of intellectual property rights.
- Encouragement for developing countries to develop national communications, nationally appropriate mitigation actions (NAMAs), national adaptation plans and technology road maps and action plans as it is only through this that meaningful development and transfer of technology can be realised.
- Technologies that enable adaptation and REDD+ are urgent priorities for developing countries, especially in Africa.

**Recommended Actions:** Kenya has implemented and is implementing several actions to promote and build capacity on climate change technologies, discussed below.

- In 2005, Kenya prepared and submitted a Technology Needs Assessment report to UNFCCC, which was a first step towards factoring the development and diffusion of environmentally sound technologies in Kenya's investment strategies. The purpose of the TNA was to identify, evaluate and prioritize technological means for achieving sustainable development, increasing resilience to climate change and avoiding dangerous anthropogenic climate change. A process to develop the second TNA is underway.
- Kenya has recently established the first Climate Innovation Centre in the world (a World Bank initiative) at the Strathmore Business School. Dedicated to supporting climate change technologies and research and development entrepreneurship, its main focus will be on innovative technologies in the area of energy, agriculture and water supply that will contribute to green development and growth. The centre will play an important role in developing green technologies in Kenya and will target solutions that are relevant across the East Africa region.
- A new Climate Change Resource Centre under the Ministry of Environment and Mineral Resources, expected to be constructed and operational in 2013, will provide information and knowledge on technology innovation, finance, capacity building and local ownership. These conditions are required for Kenya to maximize the benefits of technology for the adaptation and mitigation actions proposed in the NCCAP. The new Resource Centre will increase awareness of best technology practices in Kenya and internationally that increase climate resilience or reduce greenhouse gas emissions.

Many institutions in Kenya are involved in research and development activities for technologies that support low carbon climate resilient development. Selected examples include Kenya Meteorological Department, IGAD Climate Prediction and Application Centre, KARI, Kenya Forestry Research Institute, Kenya Medical Research Institute, Kenya Marine and Fisheries Research Institute, Kenya Industrial Research and Development Institute, Department of Resource Surveys and Remote Sensing, and International Livestock Research Institute. Academic and research institutions are also active, such as the Institute of Climate Change and Adaptation, which was recently established at the University of Nairobi to focus on research and training related to adaptation.

Communities must be at the forefront of technology development, not least because responses to climate change must be people-centred, but also because it is the people that will be required to adopt and utilise the technologies essential for reducing vulnerability and building capacity to respond to climate change. Non-governmental organizations and community-based organisations need to provide the strong links between the development of climate change technologies and their diffusion and the up-scaling of technologies to users at the community level. This is also in line with the Vision 2030 goal of a knowledge-led economy where the creation, adaptation and use of knowledge will be among the most critical factors for rapid economic growth.



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**Conclusion:** Technology development, transfer and diffusion are required to avoid the adverse effects of climate change and to enable Kenya to achieve low carbon climate resilient development. The adaptation and mitigation assessments underlying the NCCAP identify several priority technologies and the enabling actions needed to facilitate uptake and use. These technologies will be elaborated in the second TNA, which will set out a roadmap to help Kenya meet its climate goals.

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<sup>1</sup> Ministry of Science and Technology. 2009. *Science, Technology and Innovation Policy and Strategy*. Nairobi: Government of the Republic of Kenya.

<sup>2</sup> UNFCCC. 2013. *Technology Mechanism*. Available at: <http://unfccc.int/ttclear/jsp/TechnologyMechanism.jsp>.