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ENABLING PRO-POOR VALUE CHAINS

Tuesday, March 18, 2025I Year II, NO.11 I **Director:** Prof. Adriano Nuvunga I **English**

CLIMATE CHANGE THREATENS AGRICULTURAL YIELDS:

THE COUNTRY MUST THINK OF A PRODUCTION SYSTEM THAT IS RESILIENT TO CYCLONES AND FLOODS

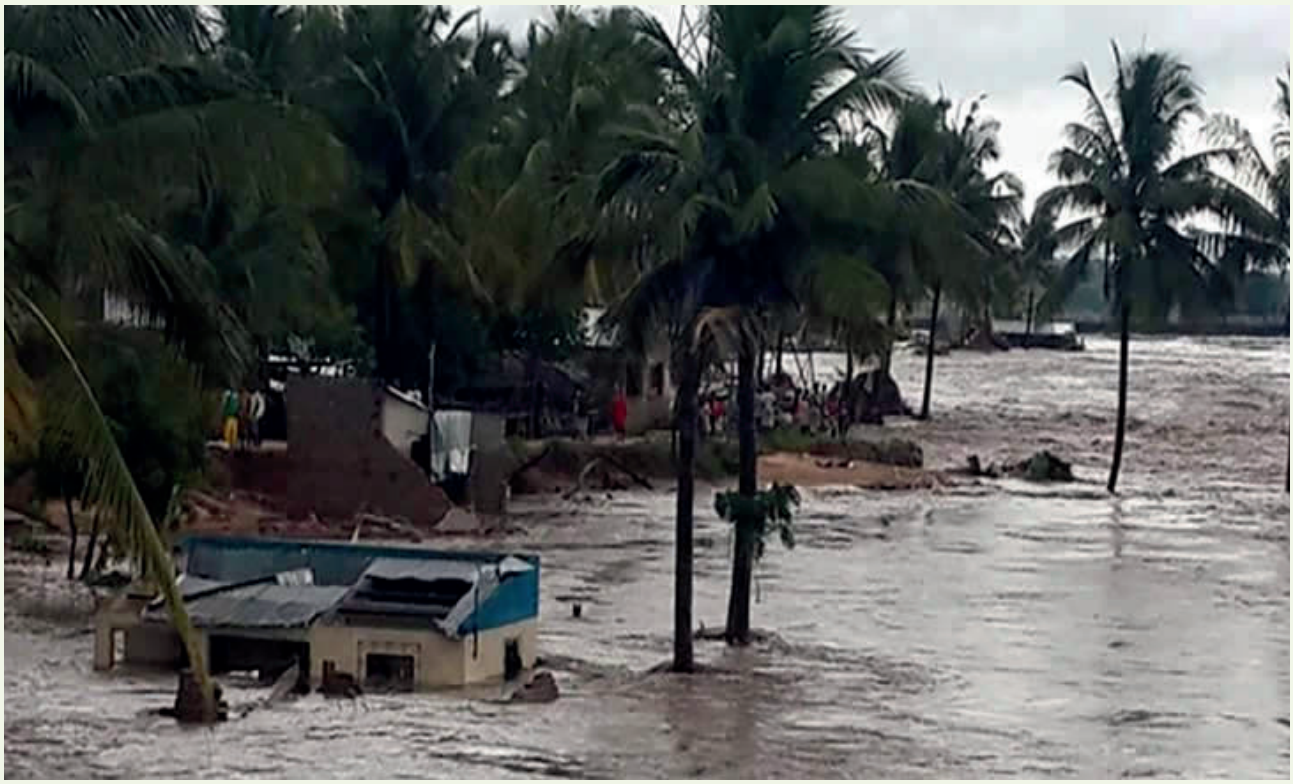
The Impact of Climate Change on Agriculture in Mozambique

Vulnerability of Agricultural Production Systems in Mozambique

Climate Change Adaptation Strategies in the Agricultural Sector

Last week, Mozambique was again devastated by the impact of a cyclone. This time it was Cyclone Jude, which brought destruction and suffering to several northern provinces of the country. Preliminary data indicate a death toll of nine, more than 20 injured and 100,410 people in need of urgent help. The cyclone caused devastating damage to infrastructure, entirely or partially destroying more than 20,000 homes, 182 classrooms, 28 health units and six bridges, in addition to damaging roads and power transmission lines. In the past five years, Mozambique has endured over ten cyclones. Despite this alarming frequency, one crucial aspect of the discussion remains largely overlooked: the impact of climate change on the agricultural sector and food security. Cyclones have wreaked havoc on farms, which serve as the primary source of livelihood for thousands of Mozambican families. For many of these families, who depend solely on agriculture to survive, the consequences of these natural disasters extend far beyond material losses. The fields—painstakingly cultivated as their only source of hope and sustenance—have been completely devastated. This has left countless people in a state of food insecurity, stripped of their means to provide for themselves. Compounding these challenges, the destruction of essential infrastructure, such as roads and bridges, further hampers recovery efforts. These damages severely restrict access to markets, disrupting the sale of agricultural products that could otherwise generate critical income during harvest seasons.

This situation is clear evidence of how climate change is directly affecting the agricultural production system, putting food security and the livelihood of millions of Mozambicans at risk.



Mozambique, a country located on the southeast coast of Africa, has a vast diversity of natural resources, ranging from fertile agricultural lands to an immense coastline surrounded by the Indian Ocean. However, the country is facing one of the greatest challenges in its history: climate change. Despite its natural wealth and potential for development, climate change, with phenomena such as prolonged droughts, devastating floods and intense tropical cyclones, is becoming increasingly frequent and impactful, compromising the food security and well-being of millions of Mozambicans.

The country's climate reality is marked by its vulnerability, given its extensive coastal geography and its heavy dependence on small-scale agriculture. Climate variability has brought extreme events, such as cyclones, which particularly affect the northern regions of Mozambique. Recently, Cyclone *Jude* caused significant damage in the north of the country, leaving millions of people homeless and crops largely destroyed. This episode dramatically illustrates the reality of a country whose infrastructure and agricultural systems are not prepared to deal with such extreme events.

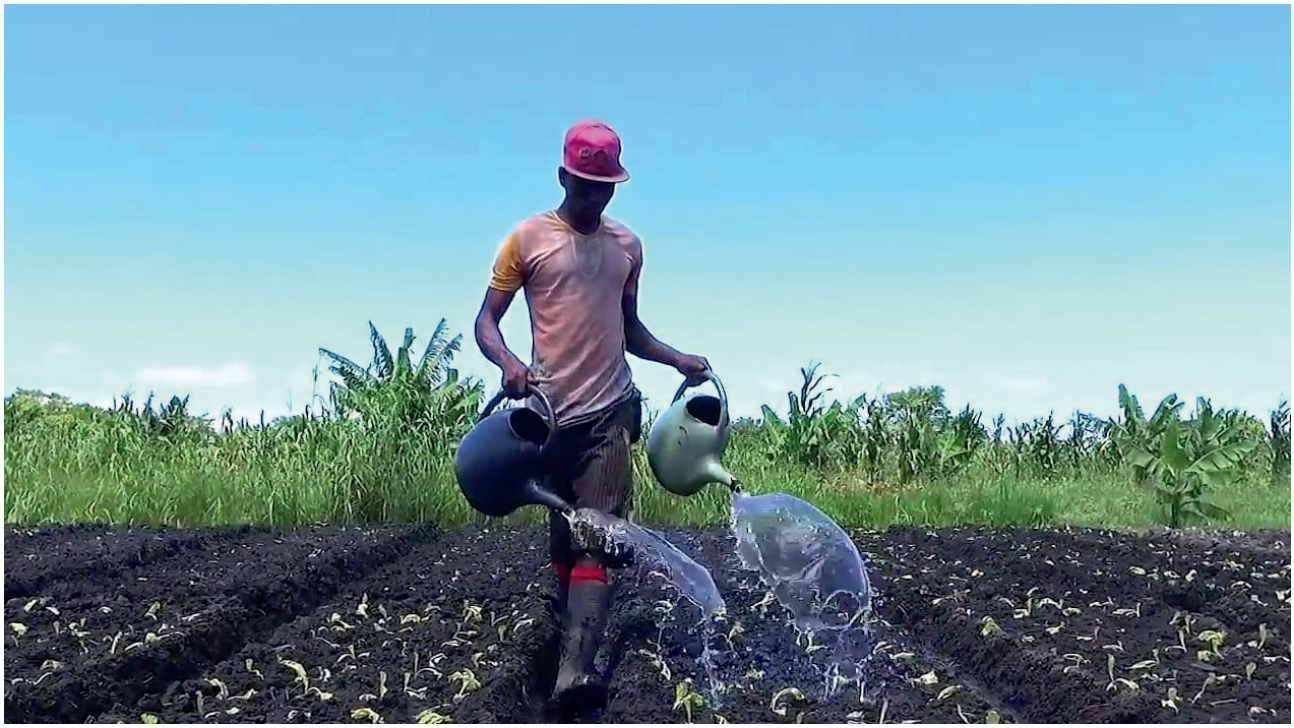
The Impact of Climate Change on Agriculture in Mozambique

Agriculture represents a vital part of Mozambique's economy, accounting for over 23% of the country's Gross Domestic Product (GDP) and employing around 80% of the rural population. However, agriculture in Mozambique is predominantly subsistence and carried out by smallholder farmers, who rely largely on rainfall to irrigate their crops. Fluctuations in weather patterns, such as prolonged droughts and irregular rainfall, have severely impacted agricultural productivity, reducing the production of staple foods such as maize, cassava and rice, which are essential for the food security of Mozambican households.

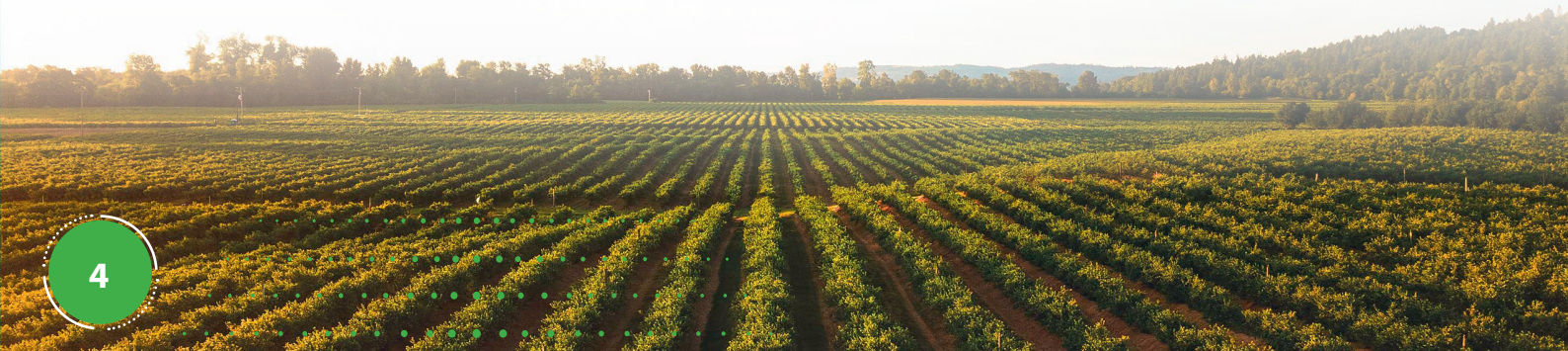
In recent years, the intensity and frequency of tropical cyclones have increased, resulting in significant damage to both agricultural infrastructure and housing. Cyclone *Idai*, which hit the center of the country in 2019, and Cyclone *Jude*, which occurred recently, are obvious examples of how extreme weather events have devastated crops and thus increased food insecurity. Rising global temperatures and changing precipitation patterns are further exacerbating the situation, making the future of agriculture in Mozambique increasingly uncertain.

Vulnerability of Agricultural Production Systems in Mozambique

The vulnerability of agricultural production systems in Mozambique is intrinsically linked to the prevailing agricultural model, which is highly dependent on climate conditions. Most smallholder farmers do not have access to irrigation technologies, resilient seeds, or climate forecasting systems that would allow them to adapt to these changes. Agricultural and transport infrastructure, which is often insufficient or poorly maintained, also hinders the ability to respond to crises caused by climate change.



Subsistence agriculture, which predominates in Mozambique, is particularly susceptible to droughts and floods. Staple crops such as maize and cassava are particularly vulnerable to climate change, as their growth cycle depends on the regularity of rainfall. When rainfall is scarce or poorly distributed, harvests fail, leading to food shortages and increased food insecurity. In addition, the lack of adequate storage infrastructure further aggravates the situation, as crops that survive droughts or floods cannot be stored properly, leading to large post-harvest losses.



Another important risk factor is the low use of sustainable agricultural practices. Many farmers continue to use traditional methods that do not take into account soil preservation or resilience to climate change. Soil erosion, for example, is a direct consequence of inadequate practices, such as intensive cultivation without the use of conservation techniques, which further aggravates the impacts of floods and droughts.

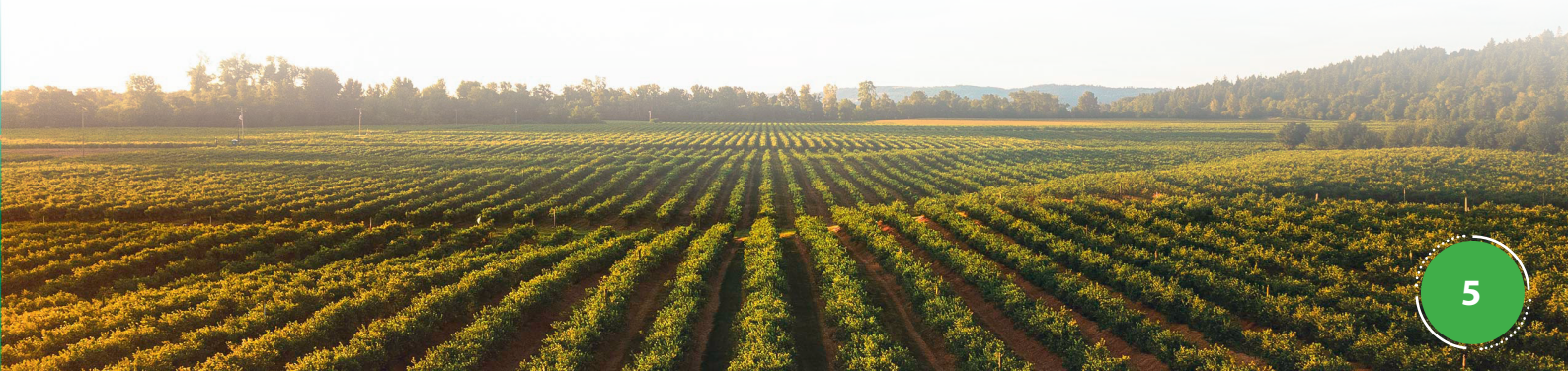
Climate Change Adaptation Strategies in the Agricultural Sector

For agriculture in Mozambique to be more resilient to the effects of climate change, it is necessary to adopt effective adaptation strategies. One of the main approaches is the promotion of conservation agriculture, which involves techniques such as crop rotation, soil cover and the use of moisture-conserving crops. These practices can help mitigate the effects of drying and erosion, as well as improve soil fertility.

The use of drought and heat-resistant seeds is an important strategy to ensure the stability of agricultural production. The government, together with international organizations, should encourage the development and dissemination of crop varieties that can withstand hotter climates and longer periods of drought. This approach will not only enable farmers to better cope with droughts but will also help improve productivity and food security.

Furthermore, integrated water resource management should be a priority. The construction of water storage infrastructure, such as dams and reservoirs, can be essential to ensure irrigation during dry periods. Implementing efficient irrigation systems and rainwater harvesting are also measures that can help improve crop resilience.

Diversifying agricultural activities, including staple food crop production, livestock farming and sustainable fisheries, can be another way to increase food security and resilience for rural households. Encouraging new sources of income helps mitigate the impacts of a single climate shock, providing a safety net for the most vulnerable communities.

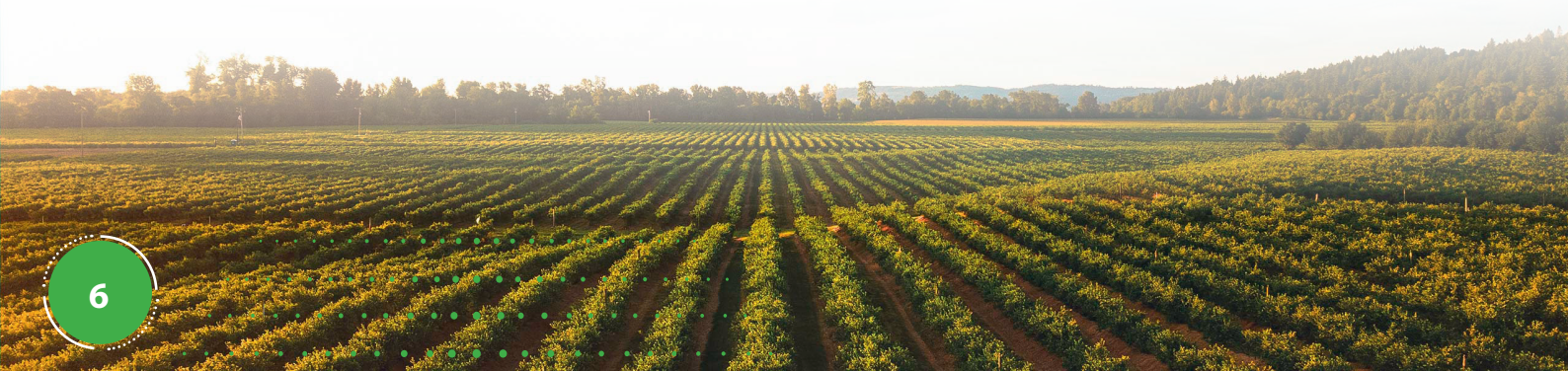


The Path to Resilience: The Role of Public Policy

The Mozambican government plays a central role in implementing public policies aimed at ensuring the resilience of agriculture to climate change. For adaptation strategies to be effective, it is necessary to invest in agricultural infrastructure and technologies that help farmers cope with extreme weather events. Creating an enabling environment for the adoption of resilient agricultural practices must be accompanied by financial and educational support policies.

Furthermore, international cooperation remains essential. Organisations such as the United Nations and the European Union, together with NGOs and other partners, should support Mozambique in implementing projects that help rural communities adapt to climate change. Financing infrastructure projects, such as irrigation and storage systems, as well as farmer capacity building, is essential to increasing the resilience of the agricultural sector.

Public awareness also plays a crucial role. The Mozambican population, especially in rural areas, needs to understand the impacts of climate change and be involved in finding solutions. The government should encourage education and training programmes to ensure that adaptation policies effectively reach those who need them most and that farmers are empowered to face the challenges posed by climate change.



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