

GROUP #7

PDF Report

Drought Risk Assessment in Rwanda

Problem Definition

Drought is a prolonged period of abnormally low rainfall, leading to water shortages that can severely impact agriculture, food security, and livelihoods. In Rwanda, where agriculture is the backbone of the economy and employs a significant portion of the population, drought poses a critical threat. The country is highly dependent on rain-fed agriculture, making it vulnerable to climate variability. Drought can lead to crop failures, livestock losses, and increased food prices, exacerbating poverty and malnutrition.

In the broader African context, drought is a recurring challenge that affects millions, leading to humanitarian crises, displacement, and conflict over scarce resources. As climate change intensifies, the frequency and severity of droughts are expected to increase, making effective drought risk assessment and management essential for sustainable development.

Relevance in the Rwandan/African Context

- **Food Security:** Rwanda's economy relies heavily on agriculture, which is sensitive to rainfall patterns. Drought can lead to food shortages and increased malnutrition rates.
- **Economic Impact:** Agriculture contributes significantly to Rwanda's GDP. Drought can disrupt economic stability and growth.
- **Social Stability:** Drought can lead to migration, conflict over resources, and social unrest, particularly in rural areas.
- **Climate Change:** With climate change, the patterns of rainfall are becoming more unpredictable, increasing the need for robust drought risk assessment frameworks.

Key Stakeholders

- **Government Agencies:** Ministry of Agriculture and Animal Resources, Rwanda Meteorology Agency, Ministry of Disaster Management and Refugee Affairs.
- **Local Communities:** Farmers, pastoralists, and local leaders.
- **Non-Governmental Organizations (NGOs):** Organizations focused on food security, climate adaptation, and humanitarian aid.

- **International Organizations:** UN agencies, World Bank, and other development partners.
- **Research Institutions:** Universities and research organizations focusing on climate science and agriculture.

IF-THEN Rules

- ✓ IF rainfall is below 50% of the average for two consecutive months THEN issue a drought alert to local communities.
- ✓ IF drought conditions persist for three months THEN initiate water conservation measures and provide technical support to farmers.
- ✓ IF crop yield is reduced by more than 30% due to drought THEN implement emergency food aid and support programs.
- ✓ IF livestock mortality exceeds 10% THEN provide veterinary services and feed support to affected communities.
- ✓ IF drought conditions are classified as severe (based on a defined index) THEN mobilize national and international resources for disaster response.