

## The Importance of Weather and Climate Data: ACRE's Agricultural Insurance Perspective

Agriculture is Africa's economic cornerstone, contributing 32% of Africa's total GDP (Cross Check; 26.8% in Tanzania and 24% in Kenya). Despite an increase in urbanization, the majority of the population, nearly three quarters, live in rural areas as rainfall-dependent smallholder farmers cultivating 0.9 to 3 hectares. Their livelihoods depend on agriculture.



While investment in agriculture throughout Sub-Saharan Africa has led to increases in cash crop and subsistence crop productivity, weather risks threaten these gains. In order to reach the goal of a more professional agricultural sector, investment by farmers with supporting stakeholders is required in addition to innovative solutions that encourage and protect farmer investment. Success in agricultural production that leads to financial stability does not only depend on a farmer's agricultural knowledge, but also on the mitigation of climatic and environmental risks that affect production.

The vicious cycle experienced by African smallholder farmers:

- Farmers require finances to invest in inputs (improved seed, fertilizer, crop protection products), production technologies and risk mitigation tools to increase their chance of a good harvest (income) in favourable seasons.
- Financial institutions continue to consider smallholders as too risky to lend to. Apart from the seasonal nature of production, increased frequency of adverse climatic conditions contributes to this reluctance.
- Farmers compromise on the quality and quantity of investment meaning even in conducive season the productivity is limited by the low quality of inputs used.

This is where development of risk transfer tools, like agricultural insurance, becomes vital. ACRE Ltd (Agriculture and Climate Risk Enterprise Ltd) a for-profit company that develops agricultural index insurance products in partnership with local insurance companies. ACRE evolved from Kilimo Salama, a Syngenta Foundation for Sustainable Agriculture project launched in 2009 in Kenya. ACRE has operations in Kenya and Rwanda and is currently setting up in Tanzania with plans to expand to Southern and Western African countries in the coming years.



The effectiveness and suitability of the products developed by ACRE relies on crop agronomic data and the weather data for the growth region in equal measure. Without accurate, consistent and accessible weather data the development of relevant weather risk transfer tools is not possible.

As a consumer of quality weather data, ACRE has observed several improvements in weather data accessibility:

- ✓ An increased number of private and non-profit organisations investing in research and dissemination
- ✓ Increased ease in accessing data from different data sources like the national meteorological agency
- ✓ A gradual acceptance of the importance and role played by third party data collectors. This is observed

by the decrease time it takes to have this data verified.

- ✓ A greater recognition of the existence of a business case in the provision of data that is accurate and consistent

Conversely, ACRE also continues to face challenges accessing reliable weather data:

- X Limited technological personnel capacity who can accurately model the weather data
- X Consistency in the available data set. This is observed in the form of missing data and short series data that is not useful in showing a trend
- X A limit in the data parameters available e.g. long term temperature data is difficult to acquire and this limits the contracts/insurance policies ACRE can model to cover risks of pests and diseases in crops
- X There are instances where the data does not give a true reflection of on ground experiences and topographic variations of a region. This indicates to the need to have access data that can be used jointly to accurately reflect on ground experience e.g. for drought stress on crops a combination of data measuring precipitation and greenness of a region would be suitable
- X The emerging vibrant business application of weather data appears to be proceeding at a much faster rate than legislature by the national meteorological agencies the primary custodians of this data.

ACRE's ability to develop and scale agricultural insurance products for smallholder farmers depends on the increased research and development happening across Africa to ensure the provision of quality weather and climatic data. ACRE also recognises that there is a need for cross sectorial partnership to sufficiently utilise the data and technologies that have already been developed. Our team looks forward to collaborating with governments, private sector and other partners to bring the vision of more professional, productive and food secure smallholders to become a reality.

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