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Rain4Africa

Rain for Africa - agricultural advice based on weather information 2015 -2019



The goal of the Rain for Africa (R4A) project was to compose the best available historical, actual and forecast weather data and make it easily accessible for each food producer, weather service, added value provider and governmental organisation in Africa, at an affordable price. From these data, different services for food producers were derived, such as advice on when to plant and when to spray both herbicides and pesticides. The project was implemented in South Africa and initially focussed on two main crops: maize (in summer) and wheat (in winter).

The development of R4A was carried out by a consortium of 10 organisations. The main activities were carried out by the Agricultural Research Council (ARC, South Africa), the South African Weather Service (SAWS, the South African National MetOffice), Hydrologic (a water consultancy firm in the Netherlands) and Weather Impact (a weather consultancy in the Netherlands).

1 NO POVERTY

2 ZERO HUNGER

8 DECENT WORK AND ECONOMIC GROWTH

13 CLIMATE ACTION

15 LIFE ON LAND

17 PARTNERSHIPS FOR THE GOALS

Provided Services

The services provided are location based weather information assisting in crop management, crop selection, and good agricultural practices. The service also provides significant advice for the management of pest and disease. Similarly the same information can also be adopted to aid in pasture and water management in livestock farming.

To reach the smallholder farmers and other clients a platform with an associated Android app, called AgriCloud, was developed. AgriCloud is an online weather based agricultural advisory system that enriches weather and climate data with agricultural information and data. This is combined with local knowledge and models (via knowledge engines that are a set of research equations or statements forming the basis of the programme, software and/or application) to generate real-time personalised advisories. Via the AgriCloud App advisories (smartphone and USSD) are accessible to extension officers and small-scale farmers. The information is delivered in all eleven recognised South African languages.

The AgriCloud platform facilitates rapid development and integration of additional services. During the lifetime of the project services were developed for maize, wheat and knowledge engines for potatoes, tomatoes, pepper, eggplant, onion, garlic, sweet potatoes, soy beans, groundnuts, sunflower, bees and beef cattle. Specific products were developed on water demand monitoring and for viticulture.

The AgriCloud advisories are accessible through different AgriCloud products: AgriCloud Mobile for extension services

and farmers, desktop AgriCloud Services for value-added service providers and AgriCloud Portal providing reports for agribusinesses, commodity traders, governmental organisations and media.

HydroLogic is the provider of the AgriCloud platform which uses the HydroNET decision support platform for data integration. The use of HydroNET has the advantage that new applications can be built on an already existing data infrastructure. ARC is responsible for the communication with extension officers and smallholders farmers. In addition, radio- and TV media were used to generate interest in the services. The AgriCloud app also facilitates the reception of feedback from farmers via a crowd-sourcing function.

Earth observation is used for the provision of weather-related advisories.



Business Model

Service provision is free for smallholder farmers, but other customers pay a subscription fee for the services. These customers can be large farmers, energy and water companies and/or the (local) government. ARC, SAWS and Hydrologic signed a memorandum of agreement in 2021 to continue R4A service delivery.

SAWS and ARC are responsible for reaching paying customers. Scaling up is done by bundling with new services developed by the consortium and by bundling with services developed by other companies (e.g. through APIs). Licencing the R4A services to others is also an option. Efforts have been undertaken to scale into new countries (Zimbabwe, Eswatini, Burkina Faso).

Impact

The R4A project is a good example of public-private-partnership. Institutional, research and business organisations cooperated to achieve common goals in a defined project period. The partnership targeted different customer segments ranging from

smallholder farmers (R4A's primary target group) to commercial farmers, service providers (e.g. using weather information), agribusinesses, commodity firms, other economic sectors (e.g. energy, water), and governmental organizations (including other African meteorological organisations).

Financial sustainability by generating sufficient revenue is an ongoing challenge. Strong points are that ARC, SAWS and Hydrologic can operate the R4A / AgriCloud services at relatively low cost and that organisational and service agreements are in place.

The R4A experience with the introduction of innovative agtech services in South Africa resulted in recommendations to prioritise translating knowledge into applications; to improve institutional contract governance; to strengthen institutional data policies with respect to data sharing; to generate sufficient capacity for marketing at an early stage, and to aim at cost containment and efficiency.

Estimated approximately **463,000** smallholder farmers were reached (of which 50% female and 20% youth)

2,100 registered users and many more second-hand unregistered users

1,100 people trained, including 695 extension officers

**Numbers are approximations based on M&E results.*



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Get inspired

The Geodata for Agriculture and Water Facility is a grant programme by the Netherlands Ministry of Foreign Affairs within the policy priorities for food security and water, which is executed by the Netherlands Space Office (NSO). G4AW established 25 public private partnerships in 15 countries to develop and support satellite based information services which positively impact the lives of smallholder food producers in developing countries.

g4aw.spaceoffice.nl



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