

## Weather forecasts to increase resilience

Can an extremely targeted, low-cost tropical weather forecast help make a difference for those most in need? In rural Senegal, where small-scale farmers are highly vulnerable to climate conditions, being dependent on rainfall for their daily agricultural activities, access to weather information that is timely, easy to understand and actionable could prove crucial to strengthening resilience and livelihoods. Working with Ignitia, a high-tech social enterprise focused on tropical weather forecasting, the World Food Programme intends to integrate weather prediction services into its rural resilience initiatives and make them available to 6,000 small-scale farmers living in 110 villages in Eastern Senegal.

**DURATION:** 2016

**CHALLENGE:** Natural Resources Management

**COUNTRY:** Senegal

**PARTNER:** World Food Programme



### CONTEXT

Senegal is highly vulnerable to shocks associated with climate change. Recent years have been marked by erratic rainfall patterns, delayed or interrupted rainy seasons, severe weather conditions and rising sea-levels which are increasing the rates of soil erosion and salinization. These climate-related events have resulted in fewer growing days for small-scale farmers, worsening food insecurity, continued poverty and stagnant economic growth.

### ACTION

Since 2012, the **World Food Programme** (WFP) has been implementing rural resilience actions in Eastern Senegal that are collectively known as the Rural Resilience Initiative (**R4**) and combine a spectrum of risk management activities, including land rehabilitation and water conservation, savings systems, access to microcredit and weather index insurance. R4's targeted measures aim to help communities achieve greater resilience to climate variability and shocks.

To date, the lack of reliable weather forecasts in the region has meant that data and resources available through radio, TV and mobile have been of negligible value to people who are dependent on agriculture. To bridge this gap and increase small-scale farmers' access to weather forecasts that are timely and easy to understand, WFP has partnered with Ignitia for a 1 year pilot programme. Ignitia is a high-tech social enterprise led by **Ashoka Fellow Liisa Petrykowska**, who has created the world's first highly-accurate tropical forecasting model together with her team of scientists. Forecasts branded as iska™ were **launched as an SMS service in Ghana in 2014** and generate reliable, GPS-specific weather forecasts designed to suit the needs of semi-illiterate farmers. iska™ has been shown to be twice as accurate in its rain predictions as global forecasts in the tropics.

Specifically, the activities of the WFP pilot programme include:

- Making iska™ an integral component of WFP's R4 Rural Resilience Initiative, linking climate services with soil and water conservation activities to reduce the risks resulting from climate variability.
- Providing iska™'s weather and climate forecasts to 6,000 rural households living in 110 villages in the Tambacounda region.
- Training 50 people to support farmers gain an understanding of weather forecasting in general and the iska™ SMS-based message service in particular, as well as the linkages with farming planning and practices.

#### **EXPECTED RESULTS**

- 6,000 small-scale farmers receive daily 48-hour weather forecasts, and monthly and seasonal outlooks via SMS for one year.
- They are able to easily understand these tailored forecasts and consequently to make more informed decisions about when and what to plant, and whether to invest in new seeds, while simultaneously improving the timing of agricultural inputs.

#### **LONG-TERM STRATEGY**

At the end of this 1-year pilot programme, a data collection action will be conducted to assess how the farmers used the forecasts in their agricultural practices and how climate advice helped them improve their agricultural practices in terms of increased production. Field evidence suggests the service is likely to be sustainable and affordable even without funding the provision of the climate service to farmers. An independent study conducted in Mali has shown that corn farmers who received weather forecasts experienced up to an 80% jump in income, while cocoa farmers report a 40 to 50% boost. Options will be considered to offer the system in a sustainable way by, for example, allowing micropayments or integrating climate information as an established tool in WFP's core resilience innovation programme.