

Mobile app provides weather forecasts for Rwandan coffee farmers

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Credit: STFC/Stephen Kill

A mobile app created by a start-up company at ESA's business incubator in the UK will soon help coffee farmers in Rwanda to protect and improve their crops by providing highly local weather forecasts.

Rwanda's high-quality coffee is one of the country's most important crops. More than half of Rwanda's [export earnings](#) rely on coffee and

tea, with coffee exports alone worth more than \$60 million.

However, changes in [rainfall](#) can devastate crops by promoting 'coffee [rust](#)'. In Guatemala, 70% of the plants were affected in 2013 and the damage could be even more serious this year.

The life cycle of the disease is up to ten years – but experts can bring the plants back to a healthy condition in two to three years. "That's exactly the targeted support provided by WeatherSafe," says Francesco Liucci, one of the company's founders.

"We were asked last year as part of a 'hackathon' to improve the Rwanda Meteorology Agency website that provides weather forecasts. But we essentially decided to change the challenge," says Francesco.

"Instead, we came up with an app that provides recommendations to [coffee farmers](#) based on local weather conditions."

Using a 'big data architecture' researched by ESA to handle datasets so large that they are difficult to process using traditional applications, WeatherSafe developed that initial concept into a set of products for different players in the coffee chain: farmers, processors, exporters and government agricultural departments.

These hyper-local forecasts can alert farmers to rain changes and any diseases that might occur.

With the support of ESA's Business Incubation Centre in Harwell, UK, part the Agency's Technology Transfer Programme, the company has developed three products generated by software that compiles multiple data sources.

For example, satellite data are complemented by specific expertise from

universities and research organisations, and data directly retrieved locally from the targeted farms.

The WeatherSafe Coffee Farmer Edition app on Apple iOS, Android and BlackBerry device takes advantage of the strong mobile phone networks in many developing countries. It delivers up-to-date, highly targeted and critical information and advice straight into the hands of the farmers.

Thanks to the outstanding quality of its coffee and the size of the country, Rwanda is perfect for applying this technology. The hyper-local forecast can be tailored to each farmer to help them make the best decisions at the right time for their specific location and environmental conditions.

Increasing the crop yields will help coffee farming in Rwanda to become more sustainable, enabling them to move from subsistence farming, where [crops](#) are grown for survival, to more profitable and sustainable business farming.

The company is building a local Rwandan team to roll out operations nationally and then to export this approach from the heart of Africa to other coffee-producing countries.

WeatherSafe last year won the UK Technology Strategy Board's Launchpad Space Harwell award, providing £89 000 in funding and business support, which they matched with funds from private investors.

The picture shows Francesco Liucci of WeatherSafe. With the baseline app ready, his plan is to have the local forecasting app for Rwandan farmers in place within the next couple of months.

Provided by European Space Agency

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