



## European Internet of Things technology supports innovation in Africa

Two EU-Africa innovation projects have succeeded in rolling out advanced digital technologies to support entrepreneurship in sub-Saharan Africa.



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Africa is the EU's natural partner and neighbour. In her opening speech at the [EU-Africa Summit](#) on 22 February 2022, European Commission President Ursula von der Leyen highlighted the need to invest in technologies on the African continent to ensure their digital transition.

Achieving the United Nations' Sustainable Development Goals is key to attaining the greening of our economy and society. In order to reach such a goal, the Commission invested in [Internet of Things](#) (IoT) technologies through its Horizon 2020 programme to accelerate the digitalisation of industry in Europe and beyond.

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### **The Waziup platform**

The word 'wazi' comes from the Swahili for 'open'. First launched in February 2016 with around €2.8 million of EU investment, [Waziup](#) opens-up new digital technologies for sub-Saharan Africa. Waziup is key to rolling out cutting-edge IoT, cost-effective communications and big data

technologies for the needs of developing countries in the region.

The Waziup consortium includes 7 partners from 4 African countries (Burkina Faso, Ghana, Senegal and Togo) and 5 partners from 4 European countries (France, Germany, Italy and Portugal), and brings together business developers, technology experts and African companies operating in the fields of agriculture and ICT. The project uses collaborative problem-solving and innovation to achieve win-win outcomes for both European and African partners while tackling key societal challenges, such as waste or water management.

Many lack the information needed to run a fish farm. Using low-cost sensors, a Waziup [aquaculture use case](#) involved monitoring the dissolved oxygen, temperature and pH of the Kumah ponds in Ghana, optimising the growth of the fish and reducing waste in the fisheries. Designed in France and assembled on-site by local partners, the prototype measured the different parameters and was autonomous in energy using a solar panel, recording data in real-time so farmers could check the status of the pondwater as they pleased.

The results showed that oxygen levels were too low in the morning and the pH was too high and varied too much due to excessive growth of macroalgae. Both elements caused the fish to grow slower, breed less and eventually die. Based on this, the project gave recommendations such as aerating the water at night and removing algae with dolomite lime, thus improving the water quality, increasing fish yield and having a lower environmental impact.

During this project's lifecycle, Waziup developed components for targeted applications, such as the gateway, sensors and dashboards, focusing on hardware and software development as well as implementing technical workshops. Other than organising various promotional activities, the main focus of the project was to develop a platform, raising awareness and training people on how to use it. While the project cycle was successfully completed in July 2021 consolidation of the open-source platform continues.

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## The Wazihub network

Established in May 2018 with around 2.3 million, [Wazihub](#) creates an open hub for IoT and big data solutions to accelerate services based on knowledge collaboration and integration. This follow-up project maximises the potential of innovative IoT services based on the technologies developed by Waziup and [FiWARE](#). The [consortium](#) focuses on promoting the use of the Waziup platform across Africa, sharing IoT best-practices through regional ecosystems made up of an innovation community encompassing entrepreneurs, startups and SMEs.

[FarmSens](#) is one such example. An affordable soil-testing device, FarmSens provides recommendations on agronomical practices for improved soil fertility for growing crops through the project's Smart Village initiative.

Sensor data can be difficult to obtain in rural Africa, where accessibility, battery power, poor internet connection, and excessive heat can become a problem. Using FarmSens' sensor-based machine-learning algorithms, agricultural workers can measure soil humidity to optimise irrigation schedules and manage their water usage more efficiently, sending data from the soil probe directly to the farmer's phone in real time. This instance of precision farming not only contributes towards climate action, but it also helps to tackle poverty and hunger in the region.

Wazihub has resulted in successful [outcomes](#) in various sectors, becoming products and services for

end users that are now commercially available on the market.Â

1200 users across 6 hubs and 48 start-ups are testament to the success of both **Wazihub** and its predecessor **Waziup**.Â Wazihub and Waziup demonstrate how European innovation funding in the context of EU-Africa collaboration can contribute to achieving the Sustainable Development Goals in Africa and support the continent to achieve its full potential.

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## More information

[Video: IoT powered in Africa by Waziup](#)

[Video: Wazihub tech hubs in different sectors](#)

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