Cozzano: a sustainably Smart Village

Cozzano is a municipality of 270 inhabitants, located in the high valley of Taravo in South Corsica. The village began its energy transition 20 years ago by investing in sustainable production. Through the Smart Village concept, local authorities wish to put digital technologies at the service of energy sustainability to accelerate the village's transition.

Cozzano's energy mix in transition

The use of biomass

MORE INFO

The village of Cozzano was the first Corsican municipality to be equipped with a biomass heating plant, inaugurated in 2015. With a power of 100kW, the heating plant produces hot water that is used to heat 1200m² of buildings in the village, including the town hall, the kindergarten, the school and the post office. The heating plant is powered by wood pellets that the municipality obtains from Corse Bois Energie (Corsica Wood Energy), while awaiting the possibility of using its own biomass resources.

For one year of heating, the village uses an average of 55 tonnes of wood pellets. This allows Cozzano to avoid the consumption of 13 tons of fuel oil and the emission of 168 tons of CO2 each year and allows the municipality to save 15.000€ on its heating bill annually. The installation of the biomass heating plant is also of considerable socio-economic interest since it facilitates the structuring of the wood industry in the region by encouraging the valorisation of wood waste in a logic of circular economy. According to local authorities, the wood energy sector creates 4 times more economic activity in the region than other energy sectors. In a region where heating needs coexist with forest resources, this initiative is a concrete example of sustainable development in its three dimensions - environmental, social and economic. On the other hand, another objective is to participate in the sustainable management of forests in the region and to reduce the risk of forest fires.

This biomass heating plant is the result of the 2012 call for projects "25 wood boilers", launched by the Ecological Transition Agency (ADEME) and the Corsican Regional Authority. Its total cost amounts to €124,330, 80% of which has been financed by European funds (ERDF), the Corsican Regional Authority and ADEME. 50,000€ have been invested by the municipality of Cozzano in this project. For more examples of the same type, see our good practices on the village of Alzen and on the wood chip production chain in the Piccole Dolomiti.

Network of the biomass heating plant

Credits Anne Sophie Tassart

Turbine of the micro-hydro power plant

Credits Anne Sophie Tassart

The use of hydropower and photovoltaics

Jean-Jacques Ciccolini, Mayor of Cozzano, later had solar panels being installed on the roofs of the village's social housing stock. A micro-hydroelectric power plant was installed on the drinking water network in order to produce electricity by turbining the water as it is conveyed to residents. Another hydroelectric power plant project, on a river, is also in progress.

Cozzano's goal is to become a positive-energy village, producing twice the amount of (sustainable) energy it consumes. According to its calculations, the municipality should eventually be able to resell its surplus energy to EDF (Electricity of France) for a value of 150.000€ per year.

Village of Cozzano

Smart Paesi, digital technology promoting sustainable development

Wishing to continue its efforts in sustainable development, the municipality of Cozzano got involved in the Smart Paesi project - literally Smart Village in Corsican. Thanks to the sustainable energy production already in place, this local project intends to accelerate the transition of Cozzano using digital tools. By using connected devices and collecting environmental data, Smart Paesi's partners want to increase the climate and energy resilience of the village.

The project, designed to be "inclusive but not intrusive", was developed with the inhabitants and the municipal team. Several actions are carried out in parallel to collect data, visualise and model them in order to optimise the management of the different natural resources. The new LoRa technology has been deployed in the municipality: the low-energy long-range wireless technology, often used for the Internet of Things and the study of natural phenomena.

Awareness-raising and support to decision-making

Wireless sensors for fine particles and ozone were installed on the balcony of the town hall to measure the air quality in the village and to assist local authorities in taking environmental decisions.

An (anonymous) energy consumption data collection system was set up. Digital technology, and in particular Open Data, is increasingly being used to support the energy transition, as it enables to analyse the consumption of resources. To make the data accessible to all, project's researchers developed a simple data visualization tool, making possible to raise awareness on energy savings by informing citizens in real time whether their consumption is up to standards or whether they are over-consuming, with a simple green or red colour code. A simulation tool was also designed; on the basis

of current data, it enables to anticipate the future evolution of the village's energy consumption and helps local authorities to adapt its energy policy.

Awareness-raising activities are also carried out in the school in Cozzano. Their aim is to engage children's thinking on sustainable development and resources consumption, to introduce them to digital technology and its possible uses (Artificial Intelligence, Open data) but also to include them in the project and communication through the school' s newspaper.

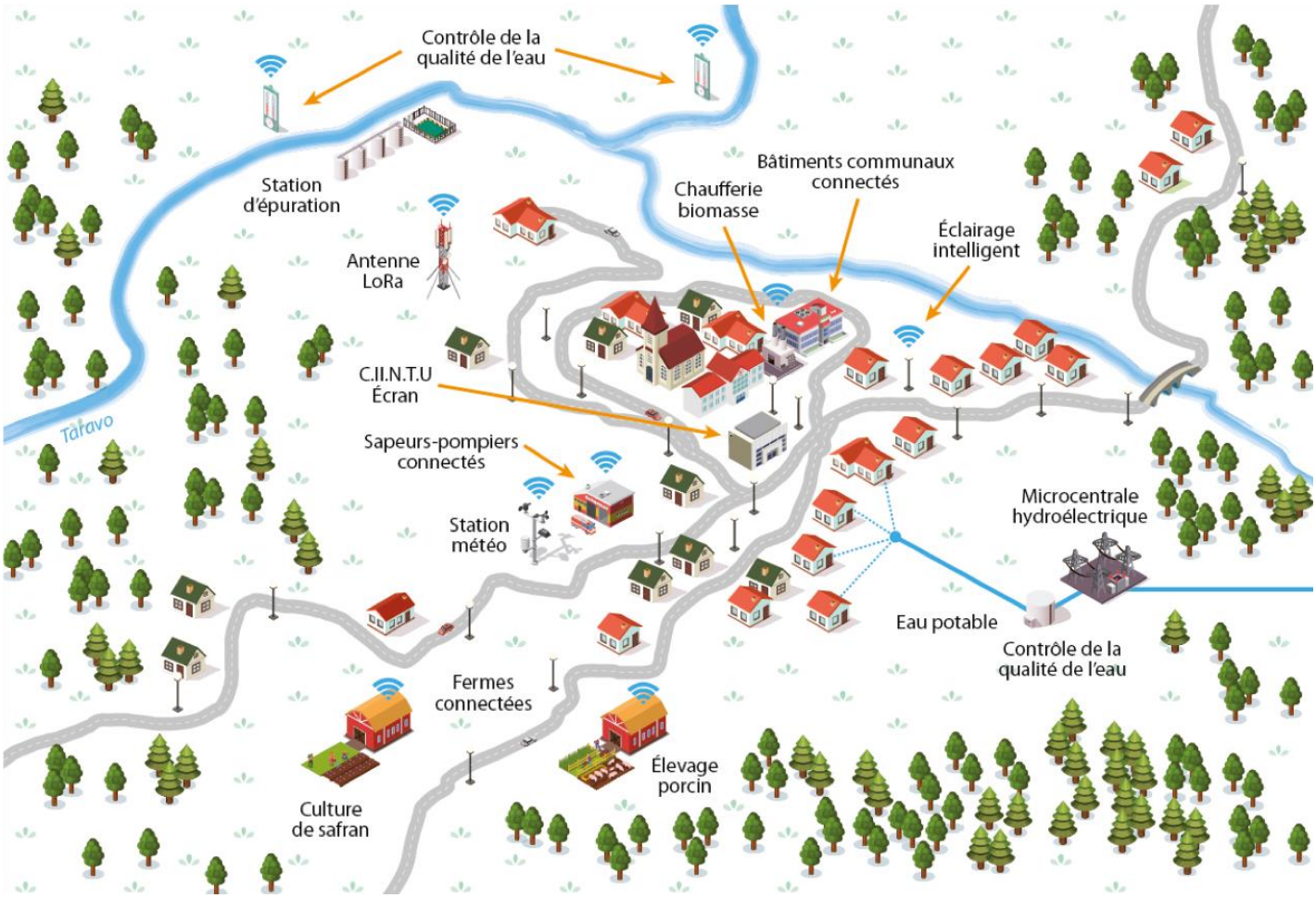
Resilience to natural hazards and optimisation of agricultural resources

Two weather stations were installed to collect meteorological data useful to the local fire brigade, such as the strength and direction of winds and rainfall accumulation. These data help to prevent natural risks, particularly floods and forest fires. This has, for example, led to a discussion on the strategic positioning of fire trucks, depending on the winds, to combat fires more efficiently.

Geo localisation collars were also distributed to the local black pig breeder so that each animal can be tracked. This technique, which is being developed in several countries, helps farmers to save time in regrouping their herd, but also to avoid unnecessary 4x4 journeys in search of lost animals, not to mention the benefits for animal welfare in the event of an injured animal. On this topic, see also our good practice on Terra Thessalia and FindMy.

Finally, sensors were also placed in organic saffron crops. The data collected enables to measure the soil quality, which is crucial for this plant, and to reduce water consumption by optimising irrigation. These data, coupled with those provided by weather stations, also make it easier for the farmer to anticipate the harvest - because saffron flowering occurs when the day/night gradient is significant.

Credits Smart Paesi



Resources

The Smart Paesi project (2017-2020) brings together various regional actors: an IT research team from the University of Corsica, EDF, the Corsican IT company SITEC and the village of Cozzano, a real living lab. The project initiators wish to prove the relevance of the Smart Village concept in rural areas as well as the usefulness of digital technology to tackle today's challenges, particularly environmental ones.

The project is the result of a call for projects on digital technology from the Corsican Regional Authority and is financed through the ERDF. Smart Paesi has a budget of €1.6 million.

Innovative Aspect

The village of Cozzano is an example of an integrated policy for sustainable development and resource management at the local level. The municipality has succeeded in developing green energy using the natural resources of the village and in involving the inhabitants and various local stakeholders in a sustainable approach. Some of the digital tools developed by Smart Paesi are particularly relevant for the resilience of forests and agriculture in the mountains.

For more information, please contact:
Blandine Camus, Communication & Policy Officer
communication@euromontana.org
+32 2 280 42 83
www.euromontana.org