LOCATION

Serbia, Slovenia and Montenegro

PARTNERS

4.4
Optimal Chicken Farm Management

CHALLENGE

Growing food demand has increased the need for animal protein. This need currently exceeds the demand by 1.7% per year, resulting in global annual poultry production reaching over 103.5 million tons (Foreign Agricultural Service/USDA, Livestock and Poultry: World Markets and Trade). To meet growing demands, poultry producers need to improve production to allow them to produce enough high-quality meat while respecting animal welfare.

Chicken farms in general do not have integrated farm management systems that can provide a holistic view of the farm activities. In many cases, partial solutions exist, enabling farmers to see raw measurements indicating the current temperature, humidity etc. using sensors provided by vendors of the farm equipment (e.g. Big Dutchman, Fancom, etc.). Usually, these measurements are available on-site only, thus limiting their usability. Additionally, rather frequent infrastructure problems, especially on smaller farms in rural areas, are a source of potentially huge losses for the farmer. These problems include ventilation not working, feeders not running, electricity issues, etc.

AIM

This pilot focuses on poultry farm management, from providing guidance and support regarding biosafety and feed mixture preparation to continuous monitoring of environmental conditions, operations and animal welfare. It also focuses on creating a transparent supply chain sharing information about animal wellbeing and the resources used during production.

HOW

DNET's poultryNET platform is used as a basis for achieving the main functionalities for the pilot. A number of IoT devices are installed and integrated with already existing sensors on the pilot farms. These include IoT devices for measuring environmental conditions (air temperature, air humidity, CO_2/NH_3 level) and for recording chicken behaviour and vocalisation. The devices collect the data, that are later processed and analysed on the cloud to provide real-time alerts and instructions to farmers. These include advice on activities to be undertaken in order to optimise growing conditions and early-detect stress issues, created by using expert modules and analysis. The deployed solution is improved and extended using DEMETER defined APIs and data formats to enable interoperability with other DEMETER components, services as well as 3rd party systems.

BENEFIT

The pilot will deliver a complete insight into the whole poultry production process such as production costs optimisation, better product quality and improved animal welfare.