

COMPETITIVENESS AND INNOVATION FRAMEWORK PROGRAMME

CIP-ICT-PSP-2013-7 Pilot Type B



Final Event at the European Parliament



Report

The FOODIE project final event took place on 28th February 2017 at the European Parliament. The participants attended the event were stakeholders coming from associations of professionals, think tank and NGOs. The three main partners presented the project, from the concept idea to the results achieved by the implemented pilots. At the end of the conference, MEP Giovanni La Via commented the results; he gave his point of view on how technical issues can be addressed by the general strategies and policies of the EU institutions.

The first speaker of the conference was Mr. De La Feld. He represented Enco, one of the 12 partners composing the FOODIE project consortium.

FOODIE (Farm-Oriented Open Data In Europe) aims to use and promote Open Data for agriculture applications. 12 partners of different sectors (industrial partners, academic and research bodies, SMEs and end users), coming from 7 different MS have been worked on FOODIE for 36 months.

Agricultural sector is of strategic importance for European economy and society. Due to its complexity operators have to manage many different and heterogeneous data.

To face current market competitiveness, agriculture requires collection, storage, sharing and analysis of large quantities of spatially and non-spatially referenced data. These data currently come in different models and formats: in order to plan and make economically and environmentally sound decisions, a good management of information is needed.

FOODIE project is addressed to a heterogeneous group of stakeholders and users:

- Users and stakeholders from agriculture sector, including farmers, advisory services and retail business;
- Public sector, to help the decision making process on taxation, subsidises and regulations;
- Researchers for large scale experimentation;
- ICT companies for the development of new applications for agriculture and food sector (SMEs developing platform and technologies producers).

The main purpose of FOODIE is to design an open and interoperable agricultural specialised platform hub on the cloud.

The platform has been implemented for:

- The management of spatial and non spatial data relevant for farming production;
- For discovery of spatial and non spatial data from heterogenous sources;
- Integration of existing European datasets related to agriculture;
- Data publication and linking from external agriculture data sources contributed by different private and public stakeholders;

FOODIE project has been implemented through three main pilots:

- **Precision viticulture (SPAIN, Galicia region)**

This pilot focuses on the appropriate management of crops variability to increase economic benefits, reducing environmental impacts. The project involves a vine producer company *Terras Gauda*.

- **Open data for strategic and tactical planning (Czech Republic)**

This pilot aims at improving future management of farms by introducing new tools and management methods, following the costs reduction path and the minimisation of environmental impacts, improving the energy balance while maintaining the same production levels. This pilot includes several activities such the farm machinery monitoring and tracking.

- **Technology allows integration of logistics via service providers and farm management including traceability (Germany)**

The pilot aims to integrate German machinery cooperatives system with the existing farm management and logistic systems to boost cooperation among different players with the help of IT solutions.

Additional scenarios have been implemented throughout EU:

- **Polish scenario** which focuses on the creation of a web-based DSS for Plant diseases and pest management, to reduce the use of chemical pesticides;
- **Turkish scenario** which focuses on the integration of geographical data with pasture/grasslands data collected by the National Department of Pasture and Forage;
- **Italian scenario**, based on a system developed to track animals by processing data from GPS;
- **Latvian scenario**, addressed to precision farming and horticulture.

All the data stored on FOODIE platform are essential for the management of precision zones, for the precise application of fertilizers and pesticides, for quality observations and for future prediction of expected harvesting results.

FOODIE project created an open and interoperable data platform to manage different data simultaneously, which allows end users to make analysis and to use data to achieve better results.

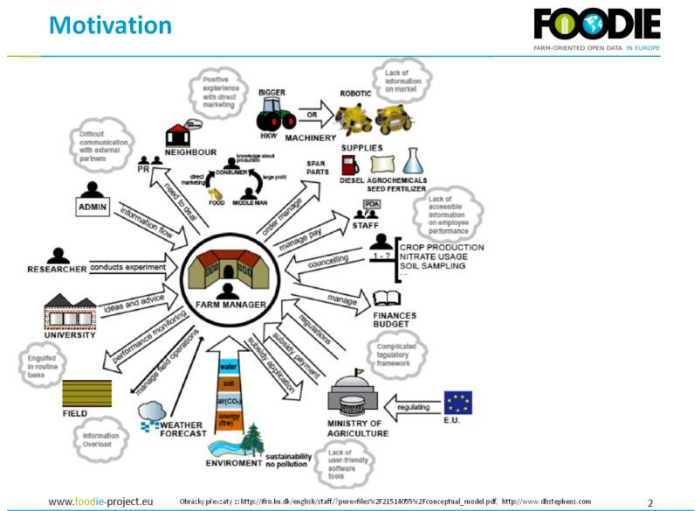
Open data and volunteered data and shared knowledge among users' community are the key value proposition of FOODIE project.

Speaker 2 # Mr. Karel CHARVÁT

His speech dealt with FOODIE Data Models. . To succeed in increasing profit for farmers with decreasing input we need to build knowledge management. Knowledge means process information about farmers' activities, therefore FOODIE partners have elaborated a complex system able to manage and store all farm related data.

The agricultural system visualized here, deals with a "poor farmer". The farmer plays the role of the person who is not focused on producing food but someone who produces information. The main concern is that all such information has to be provided in different formats and through different systems.

Farmer has many obligations and the main task is to make all this information interoperable and valuable. A lot of information such as machinery fleet monitoring, satellite images, information about fertilizers and pesticides, sensors and meteorological I data are part of FOODIE Data Models. These are all compliant with EU INSPIRE Directive(2007/2/ES), but also with ISO 19100 series standards; CAP IACS (Common Agricultural Policy Integrated Administration and Control System); GEOSS AIP-8 . This model is now in available in UML and PostgreSQL. Although this model is apparently complex, it is logically constructed. It comprises information about farms; information about the fields; about single units called "Plots" .Such data (also historical data) are relevant when farmers are developing different types of analysis of their fields for carrying out their decision-making activities.



Transport Data Model, as part of FOODIE Data Models, is addressed to provide information about roads and machinery activities in the fields. This information is relevant since the consumption of fuel for one type of crop differs from other type of cultivation. Voluntary data are also processed by FOODIE. Indeed a farmer may go to the field with his smart phone and take a photo and storing it in the same form of a sensor measurement.

Mr. Walter Mayer

The third speaker of the event, Mr. Walter Mayer from PROGIS, presented the importance of Open Data in agriculture, the stakeholders' needs, the policies and the strategies recommended for the good implementation of the results achieved by the project.

The discussion focused on five main important points:

- **Public Private struggle.** The debate between public and private: who owns data and who has the right to use them.
- **ICT as problem solvers.** In the last decades many problems in different sectors (industry, healthcare, food security and everyday life) have been solved by the improvement of the usage of Information Technology. Statistics say that IT techniques can help to solve 85% of the existing problems; in order to achieve good results they must be built for larger projects and they must be available for many different entities.
- **Better understand the stakeholders.** The data available are not provided just for farmers: many other stakeholders must be considered. Open data, IT infrastructures should support also advisory boards, ministries, agro-banks, insurance companies, buyers, suppliers, agro-service organisations, certification bodies, etc...
- **Concept.** The project starts with the control of the IT state of the art and aims to improve the existing IT infrastructures integration and to boost the stakeholders' cooperation.
- **Benefits.** Stakeholders involved can achieve economic benefits from the project and, if they manage it well, they can get enormous ecologic benefits, even bigger than economic profits. To achieve good results and benefits, designing large scale projects, involving many stakeholders and information providers is required.

The main aim of FOODIE project is to boost the cooperation among international (UN, FAO, EC...), national (Ministries, regional and local governments, advisory boards, R&D and education...) and private (farmers, organisations, insurance companies, certification bodies, transport sector and food- feed industry) players. All these stakeholders need the same information but they use different approaches: the main challenge is to integrate all their activities in order to share more information and data.

Nowadays, technology provides a large amount of useful data and information in the agriculture field:

- **Geo DATA:** Sentinel data, orthoimages, cadaster data, soil maps, geological maps, LPIS data, weather-data, MoF soil data, protected areas, other maps.
- **ALPHANUMERIC DATA:** machines & costs, fertilizer & chemical contents & costs, pesticides & active substances & costs, seeds & varieties, crops & methods, others.

Many of these data lay unused in the storage systems: data providers, due to bureaucracy and tight regulations, protect all the information they collect. Access to information becomes not easy for the farmers and the other stakeholders. In some cases you should provide a formal requirement to the government and it takes weeks or months to obtain the information you asked for, but open data means access to data with one click: one of FOODIE project challenge is to make these data easily available for all the stakeholders in order to improve their activities and their products.

The key question, which boosted the FOODIE project, was: what if, farmers and the group of interest can access all these information? What are the benefits we could reach?

If there will be tools, platforms and IT infrastructure providing all these data to all the stakeholders, we could improve many activities in the agriculture sector:

- **Land consolidation, environment and risk management.**
- **Precision farming and harvesting.**
- **Logistics.**
- **Farm and forest management.**
- **Geo info maps.**

Agriculture is one of the main important sectors of European economy. According to 2013 Eurostat statistics, agriculture covers 50% of land area where 60% is arable, 34% is committed to meadow and 6% are permanent crops. Europe has 3.5 % of worldwide agriculture area.

Benefits coming from the improvement of using IT in agriculture exceed the costs. The most important fact is that not just farmers can take advantage from IT tools: also advisory boards, government bodies and other stakeholders can benefit from the employment of technology in agriculture. The same infrastructures and tools implemented for agriculture sector and farmers can also be used for forestry, environmental issues, natural risks management, smart rural areas and village management.

All these benefits and results achieved thanks to FOODIE project activities will be better spread and exploited if institutions implement the right policies.

- Policies and strategies of the EU have to push further for free data access: farmers and all the other stakeholders need an easy access to the intelligent infrastructures providing data.
- The European Commission, which funds many projects to spread the implementation of IT tools among agriculture sector, also has the task to define better and more precise rules to give free access to data.
- The concept of “having more information and data to make better decisions” is taking advantage on the old idea of “information to earn money”.
- Costs reductions will occur only if projects will be implemented in a large scale and if they will involve many stakeholders.

European Commission and the other major institutions have to face important challenges to assure the success of their policies:

- The struggle between public and private or farmers and commons is negative for the economy and the competitiveness of agriculture sector; a political pressure to develop the cooperation among different players is needed.
- Farmers and agriculture SMEs won't share the information they have, if they don't have *trust centres* managed neutrally.
- Education, training and capacity building process have top-priority and represent a must to improve the competitiveness and the strength of European agriculture.
- Agricultural universities currently do not educate their students to geodesy and photogrammetry, which represent important tools for the implementation of technologies in agriculture.
- European Commission must be very fast: funding projects like FOODIE is not enough to take advantage on the market. Competition coming from other countries and continents is high and European Commission must be quick to implement regulation and policies which allow to European farmers and SMEs in agriculture sector to face the competitiveness with foreign companies.
- Nowadays farmers and stakeholders have no will in change; to push them to develop technology and share data, European Commission have to struggle for more benefits for them.

MEP Giovanni La Via's conclusion speech

As a rapporteur in charge of the reform of Common Agricultural Policy (CAP) in the previous legislature, MEP Giovanni La Via based his speech on his experience both as a professional in agriculture field than as a politician. He highlighted the importance for farmers and stakeholders to own better quality information. The availability of open data can help SMEs in agriculture sector to reduce economic and environmental risks; on the other hand better information can improve companies' activities by increasing the productivity of crops, saving energy and the consumption of fuels or reducing the use of pesticides. From a political point of view, he underlined the importance to share more information to improve the control systems on crops and food production. To improve the agriculture sector, he explained, EU is going to spend 52 billion per year to implement CAP; this huge amount of money means that EU is committed to improve data sharing and cooperation among different stakeholders in order to have better information that could help the decision makers.

MEP La Via also answered to some issues raised during the discussion: most of the SMEs, operating in the agriculture sector started to convert most of their crops, from food production to biofuel production. He explained how EU is protecting its food production implementing regulations, which are able to lock the amount of crops committed to biofuels production. He also introduced the fact that European Union is starting a “second-generation” biofuel production, based not just on converted crops, but on other organic substances.