Chapter 3.11
Traceability Systems for Sustainable Development in Rural Areas

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ABSTRACT

In a global world, where a lot of international trade treaties have been signed, we must face new threats such as influenza A (H1N1) or bioterrorism. In this context, to control the origins of food can save lives and big amounts of money. Meanwhile, new regulations in the European Union have arisen. In accordance with the provisions of Article 18 of European Regulation 178/2002, from 1(st) January 2005, all European companies in the food industry must have implemented a traceability system. However, it may sound strange that after all these years with this regulation in force some of the workers in this area don´t even know what traceability is. This document pretends to give some details on food traceability, and it will expose a real case in which cutting-edge technologies have been applied to solve the traceability in rural areas of northern Spain, by improving productivity and allowing small businesses to offer more competitive and safer products, and of higher quality.

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INTRODUCTION

As it has been used for a very long time, traceability is not really something new. For example, Greek artists began to sign their work regularly

in the seventh century, thanks to which we are familiar with great philosophers like Heraclitus or poets like Theognis of Megara. However, the names of Egyptian artists, who tend not to sign their works because of the set of mind of another culture, are not so familiar to us. Without doubt, the key of traceability is the ability to obtain information about the origins of a product. In the text we will show how we can enhance sustainable development, regional competitiveness and regional innovation by using traceability systems.

This project below is about a regional innovation system capability to answer to the needs of traceability systems and sustainable development in rural areas.

Food Traceability

The concept of Food traceability is relatively new, and because of that many employers and many consumers do not know what it is. In 2003, the OCU (Users and Customers Organization, 2009) undertook a study to 310 partners in Spain, asking them if they knew where their work has been done, and 95% of them answered that when they buy a product they would like to have as much information as possible about where it came from and if possible to even find out the exact origin of the raw materials from which is obtained. However, paradoxically, only 8% knew that that description was precisely the definition of food traceability.

More specifically, under Article 3 of European Regulation 178/2002 (The General Food Law Regulation (EC) 178/2002, 2002), food traceability means *the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through all stages of production, processing and distribution*.

Food traceability was born to prevent food crises such as the mad cow (Ratzan, 1998). On one hand consumers demand each time more details about what they are eating, about their origin and the route that the product has followed from extracting raw materials through the entire evolutionary process undertaken. On the other hand, producers want to make sure that what they sell will not cause any problem to their customers, ensuring that they will not to damage their brand image, or that a food problem caused by a competitor company can disrupt them in any way. The right to a healthy diet, promoted by global agencies such as Food and Agriculture Organization of the United Nations (FAO) (*Right to Adequate Food*, 2002), shows that citizens can demand a control on the food they eat. The problem is that the production process is not always controlled, making traceability a very useful tool to control the entire food chain. Traceability is synonymous of *reliable information*.

Contributions of Food Traceability

Traceability by itself does not serve to make food safer, but as a tool to manage risk, it can avoid as far as possible food disasters. Briefly, one can say that with traceability key information can be obtained from products and knowing the background of such products you can find out if they are dangerous for people.

What we achieved with traceability is just to identify a product, providing data on raw materials, origin, destination, the way it was manufactured, the checks on the product, the results obtained and the dates when the whole process took place.

Figure 1 shows that there are two types of traceability. Backward traceability, which basically responds to the following questions: What was done? Who did it? Where? Forward traceability, on the other way, responds to the following questions: What is performed? Who performs it? Where?

As can be seen, two of the most efficient methods used to identify a product unmistakably, is through a barcode or an RFID tag. However, other methods can be used like manual labeling of dates and times.