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DEVELOPING USEFUL DIGITAL TOOLS TO SUPPORT FARMERS PRODUCING AND SELLING MEATS AND MEAT PRODUCTS IN LOCAL SHORT CIRCUITS

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I. INTRODUCTION

Responding to societal demands, more and more farmers have engaged in local short circuits. Recent data showed that 23% of French producers are engaged in short circuits. In the bovine meat sector, it's estimated that 16.8% farmers sell part of their product meat in short circuits, among them 58% directly deal with meat cutting and processing into meat products. In total, 7.7% of French beef cow are exploited throw local short circuits [1].
The engagement in local short circuits means the development of new activities for animal farmers, especially for the ones who manage meat cutting and processing, and who sell their own products. This leads to a need to acquire technical knowledge about meats and meat products processing, hygiene and food safety, dealing with clients…
Furthermore, it's known that farmers engaged in direct sale in order to diversify their sources of income and directly benefit from the added value of the products [2]. But a recent report indicates that selling local products stabilizes the income of involved producers, although without necessarily improving it [3].
For these reasons, the VICTOR project means to develop support digital tools for beef and pork farmers in short circuits to improve their knowledge and control of the various aspects of the quality of their meats and meat products, and to calculate the profitability of their activities.

II. MATERIALS AND METHODS

Surveys were conducted among the stakeholders of short circuits. First, surveys were carried out to identify their expectations regarding the quality of meat and meat products in local short circuits (targeting both producers and customers), including both qualitative interviews and an online survey (March 2022-June 2023). The collected data were subjected to descriptive analyses. Next, technical surveys were conducted in 2023 with 29 farmers (cattle and pig farmers) who processed the meat from their own animals. The aim was to assess the management of profitability (including working time), hygiene, and meat product technology.
Then the VICTOR project partners were able to determine the digital tools to be developed for farmers involved in local short circuits. Divided into 6 working topics (profitability, good hygiene practices, microbiology & regulations, meats & meat products technology, carcass cutting optimization, and client relationships), the VICTOR project partners developed e-learning training pathways, calculation tools, or downloadable documents, intended for farmers who process and sell their own meats and meat products.

III. RESULTS AND DISCUSSION

The results of these surveys were presented at the 70th ICOMST in 2024 [4]. These collected data helped to identify the producers' needs in terms of support digital tools, either through the direct expression of these needs by the respondents or through data analysis, which revealed gaps in management. For example, about 75% of surveyed farmers expressed a desire for tools to help them understand and implement regulations on the safety and hygiene of meat products. However, the surveys did not reveal any negligence or lack of control in this aspect. In contrast, more than 50% of the surveyed farmers were surprised by the assessment of the weekly working hours dedicated to this specific activity (higher than their initial estimates), indicating a lack of control over the time spent on various tasks related to production, processing, transportation, and distribution of meats within short circuits.
Table 1 lists the various digital tools developed by VICTOR project partners, organized by topic and format. They will enable meat and meat product producers working within short circuits to better manage the profitability of their activities and the quality of their products, thereby meeting the expectations of local short circuits stakeholders: 1/ Taste and local origin, 2/ Freshness and hygiene of products 3/ Relationships between clients and farmers, value for money, accessibility, practicality of products, consistency, etc. (Survey results from 2022, data not shown).

Table 1 – VICTOR digital tools for farmers who process and sell their meats and meat products in local short circuits (by topic and format)

Topics	E-learning training pathways	Calculation tools	Downloadable pdf documents
Estimation of short circuit activity profitability	1 pathway about the method of profitability estimation	1 online calculator for the whole profitability of short circuit activity and 2 downloadable Excel to estimate transportation costs and total working hours	-
Implementation of good hygiene practices	2 pathways about organization & flows in meat workshop, and about good & bad hygiene practices	-	-
Microbiology & regulations for processing meat and meat products	5 pathways explaining meat microbiology and related European & French regulations	-	Technical references (ex: microbial criteria, meat products classification…) and decision trees
Meats and meat products technology: knowledge and references	6 pathways explaining evolutions from slaughter to final meats and delicatessen, and technology to manage meat products quality	-	Technical references (ex: typical output from animal to meat, carcass and meat defect list, delicatessen process…)
Bovine carcass cutting optimization: from carcass to product and profitability	-	1 downloadable Excel to estimate meat quantity from carcass weight, by type of products (meats for grilling, for grounding, for stewing…) and profitability according to production costs and selling prices	-
Client relationship: how to deal with clients about issues linked with meat in short circuit	5 pathways illustrating conversations with clients about issues linked with meat in short circuit	-	Popularized explanations of the illustrated issues

All these digital tools will be freely accessible to anyone interested (farmers, advisors, students...) so they can complement the necessary training for producing, processing, and selling meat and meat products in short circuits. All project deliverables will be available on the site https://idele.fr/victor/.

IV. CONCLUSION

The whole project VICTOR permitted 1/ to identify expectation of local short circuit stakeholders regarding meats and meat products quality, 2/ to evaluate profitability, hygiene and quality management by farmer producing, processing, and selling meat and meat products in local short circuits, 3/ to develop useful digital tools to support them in this activity, in order to achieve their goals of meats quality production while being profitable, hence sustainable.

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