Research Summary Sheet

Deliverable n°: 1.5 (Task 1.3)

"Toward a near zero-waste society: a report on multi-stakeholders perspectives of sustainable agro-waste management".

Context and Challenges

This report investigates the perception of different stakeholders on the sustainability of the agricultural waste management practices and factors influencing the uptake of innovative solutions.

Our aim was to build an overview about the roles of the main players/stakeholders in agri-food chains in order to understand their current practices, needs and expectations, with special regards to agro-waste in Europe and China.

A particular attention was given to assessing the current solutions used for valorisation of vinery wastes, manure and straw and collecting feed-back on the new NoAW conversion routes in order to have a better understanding of the expected benefits of and potential obstacles to the proposed methods. As the legislative aspects play an important role in the implementation of the possible paths, the EU legal framework was re-viewed with special focus on NoAW new solutions, with a particular attention devoted to the directives transposed into national law.

The existing processing and valorisation methods of agricultural waste focus on the nature of the already generated waste and do not consider sufficiently the sources, causes and place of the waste generation along the whole value chain. Therefore, we aimed to develop a conceptual framework and method for analysing waste and loss along supply chains.

Results and Implications

The **literature review** showed that both in Europe and in China, the market players meet quite similar obstacles in tackling sustainability issues. The most important barriers are related to the complexity and costs of administrative, legal or certification procedures and to financing aspects, such as access to funds and to public support systems. Lack of human re-sources also were highlighted in both regions. Different stakeholders have different perceptions on sustainability issues of the agricultural sector; therefore it is very important to understand each player's views and opinions. 73% of European companies have undertaken some activities related to circular economy. On the other hand, in the consumers' opinion the industries are not doing enough for protecting the environment. Therefore, awareness raising activities, which highlight the efforts of industry, can be beneficial. Consumers perceive that R&D and legislation can help tackle environmental problems, similarly to the answers received from SMEs. The consumers believe that heavier fines for breaches of environmental legislation has more positive effect on tackling environmental problems than the increase of incentives. On the contrary, SMEs find the increase of incentives/supporting systems more helpful.

The project leading to this application has funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 688338.

The **NOAWVote software** has been developed in the framework of the NoAW project. The current version is a standalone application to install on a laptop. It permits to aggregate stakeholders' preferences using different voting rules. Aggregation may be computed on the whole population or on subgroups defined using criteria (country, type of waste, …). It has been used successfully on the data obtained thanks to the NoAW surveys. It is currently being extended by a Deliberation module in WP2, which will lead to better and more accurate decision-making by taking into consideration both rankings and justifications.

In terms of the **new solutions provided by the NoAW** project:

- The preferred route for valorising manure was the production of bioenergy.
- Farmers and converters, who are dealing with straw or other plant wastes, found the biofertilizer solution the most appealing.
- The preferred NoAW solutions for the valorisation of winery wastes were biofertilizer, followed by biomaterials and bioenergy.

The comparison of the Chinese and European results suggests that respondents in the Chinese region are more likely to prefer valorisation methods which help the production of new biomaterials. The production of biomaterials, biopolymers or other solutions were selected as the preferred solution in this region. Other preferred applications listed by the Asian participants were the followings: extracting valuable components for food applications and production of re-fined essential oil. On the contrary, the production of bioenergy or biofertilizer were the preferred options in the European countries represented in the NoAW survey.

Different stakeholders had slightly different views on the **potential obstacles** to these new valorisation methods, but a common pattern can be observed.

- Difficulties around authorizations and costs (including maintenance) were seen as barriers by the potential users.
- Having no market or a large number of competitors were also mentioned as obstacles.

Therefore, business analysis and strategies to be developed in WP5 are an essential step of implementing these new valorisation methods, but they need to take into consideration the chain-specific aspects.

Further information on NoAW project: *http://noaw2020.eu*

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