Research Summary Sheet

Deliverable n°: 1.1 (Task 1.5)

"Key indicators and methodologies for assessing the impacts on soil, water, air quality and human safety of agro-waste management".

Context and Challenges

The **NoAW** "**No Agricultural Wastes**" project will develop an advanced chemical and biotechnological platform to convert a large set of solid assets (wheat straw, winery wastes) as well as manure. Nonetheless, one major challenge of these new waste valorization routes is to obtain better sustainability compared to traditional conversion routes. Thus besides to evaluate the economical sustainability of these innovative wastes management conversion processes, it is of prime interest to assess also the environmental and human sustainability. Such objective and methodologies used have been developed through the **Task 1.5: "**Key indicators and methodologies for assessing the impacts on soil, water, air quality and human safety of agro-waste management".

The evaluation of the environmental and human impact need the development of appropriate indicators that could assess it. This work has been realized through the **task 1.5** during which:

- **Key sustainability indicators (*i.e.* environmental, human)** for assessing the environmental and human impact of the agricultural wastes management routes have been selected.
- **Methodologies** have been determined that will be used to quantify or evaluate the indicators.

Results and Applications

The main results of the deliverables 1.1 are the following ones:

- **Several sustainability indicators** have been developed to assess the impact on environment on the various items: soil; air, water and human risks and safety as shown.
- **Methodologies** for quantifying these indicators have also been provided and will be used all along the NoAW project.
- **Preliminary insights on European legislation** and threshold limits have been provided when available.

These indicators will be further used in different tasks of the project to implement the sustainability of the various processes by:

- Serving as base for the Life Cycle Assessment (LCA) Analysis in WP2.
- Be used in the stakeholder's surveys that will be implemented in task 1.3 for investigating and mapping economic, environmental and social challenges and opportunities of agro-waste chains.
- Implementing the multicriteria sensitive analysis tools developed in WP2.

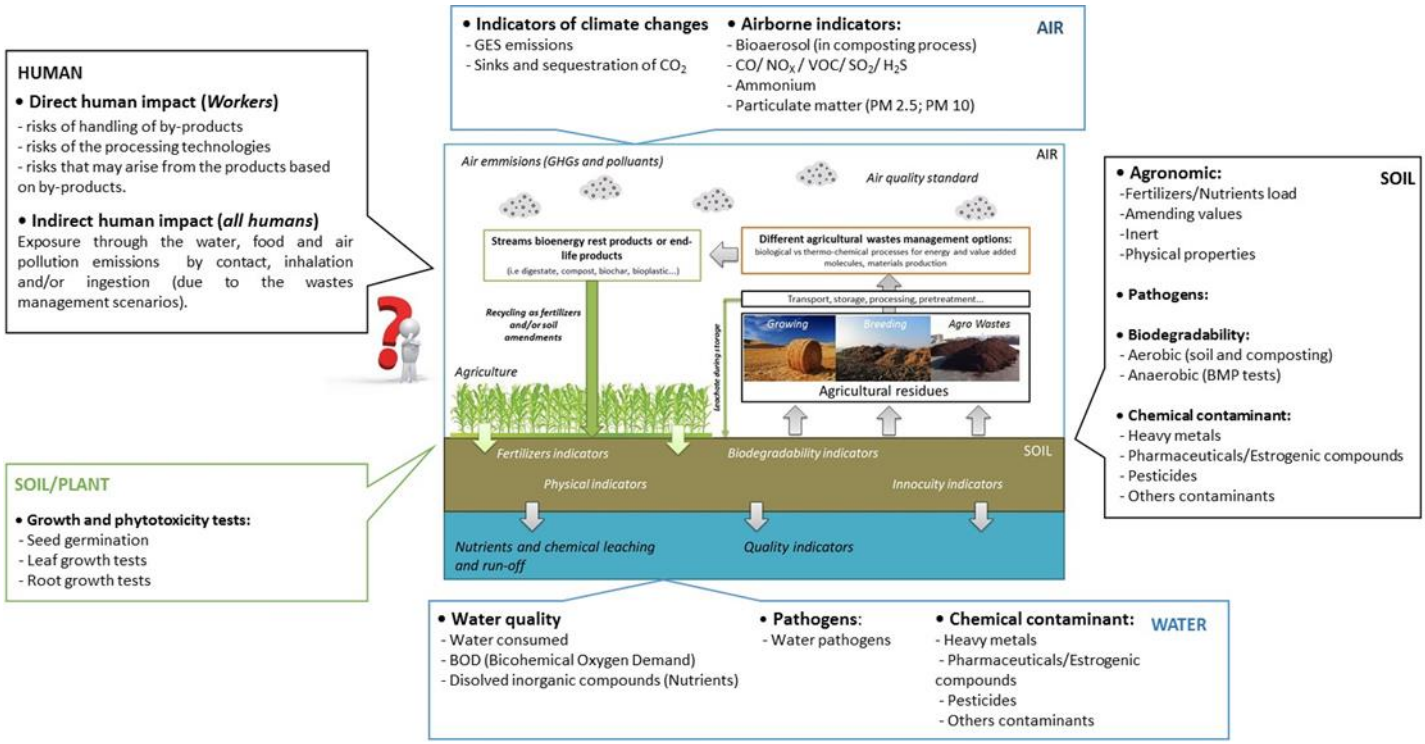
The project leading to this application has funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 688338.

Serving to evaluate the overall sustainability of the various wastes management processes in combination with economical and other social indicators

Breakthroughs, benefits and added value

The **task 1.5** have defined key indicators and methodologies for assessing the impact of the various processes that will be developed under the NoAW framework. Due to the diversity of the processes developed in the NoAW project, a specific list more exhaustive than classical found in literature have been developed with specific indicators allowing to address the impact on the various ecosphere items (air, soil, water, human…).

Summary of the various sustainability indicators (i.e. environmental and human) that have been defined for the NoAW project.



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

INRA (Coordinator): Prof. Nathalie Gontard, e-mail: nathalie.gontard@inra.fr

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