



The partners of the LOOP4PACK project are pleased to announce that the D4.1 deliverable, Cartography of available feedstock resources, is finished and has been sent to all partners on the 19/06/2020. This deliverable was written by Frédéric Merle (Euramaterials).

### Summary of the deliverable:

The objective of this study is to estimate the volume, availability and characteristics of food industry processing co-products in the regions of the Euramaterials (ex Matikem) and Agri Sud-Ouest Innovation (Hauts-de-France, Occitanie, Nouvelle-Aquitaine) competitiveness clusters, with a special focus on McCain potato processing by-products. Two recent studies by ADEME and Reseda served as a basis for this analysis, the study being completed by a spreadsheet synthesizing data from the European Agrocycle project on the chemical characteristics of most of these co-products.

McCain produces in its 3 French plants nearly 600,000 tons per year of pre-fried frozen products (French fries) generating more than 55,000 tons per year of co-products in the form of potato peels, white starch and used oils. The potato peelings whose characteristics are known and listed in the study are currently valorized for animal consumption and generate a valorization cost for the McCain company. Recovered starch, which is practically pure, has a better result of valorization.

Upstream of the generation of agro-industrial co-products, it is necessary to know the main agricultural productions within the three regions, essentially cereals, oilseeds and protein crops, beets and potatoes for the Hauts-de-France, also the leading producer of milk; cereals, oilseeds and protein crops, wines for Nouvelle-Aquitaine and Occitanie, also a leader in the production of fruit and vegetables.

The main players in the processing of these agricultural products are then listed by region for the following sectors of activity:

#### Hauts-de-France:

- Starch processing (75% of the national potential) and cereal processing with thirteen major players including Roquette, Cargill, Tereos and Menisseez ;
- Oilseeds with 4 major players including Oléon and Lesieur;
- The sugar industry (40% of French sugar factories) with Tereos and 4 players in the confectionery sector:
- The potato and vegetable processing industry with above all the 2 Nordic giants of the McCain and Bonduelle sector:
- Finally, the processed dairy sector within the units of Nestlé, Haagen Dazs or Novandie.

#### Nouvelle-Aquitaine and Occitanie :



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- The first and second transformation of cereals; about twenty main players have been identified, including Mondelez and Blédina for Nouvelle-Aquitaine, Biscuits Poul, Nutrition and Health for Occitanie;
- Oilseeds with the 2 actors of the extraction present on the territory of Nouvelle-Aquitaine;
- The predominant wine and distillery industry in these regions with a great diversity of actors;
- Fruits and vegetables, with a dozen large processing plants, including those of Maître Prunille in Casseneuil, Sertram (General Mills) in Labahut and Andros in Biais sur Cère and Saint Mamet in Vauvert.

Coming directly from agricultural production and above all from industrial processing, the volumes of co-products available and their value added are analyzed by field of activity with the following remarkable examples:

- Oilseed processing produces more than 3 million tons of co-products, including 1 million tons in Nouvelle-Aquitaine, 677,000 tons in Hauts-de-France and 470,000 tons in Occitanie ;
- The starch industry and starch manufacture generate 1.8 million tons of co-products (75% in the Hauts de France);
- The beet sugar industry produces more than 1.5 million tons of co-products, 50% of which are produced in the Hauts-de-France region ;
- The milling sector generates 1.1 million tons of co-products, of which 500,000 tons in Nouvelle-Aquitaine and 360,000 tons in Occitanie ;
- The wine industry, with more than 12 million tons of organic waste, generates the largest volumes of co-products.

Apart from the milk industry, which uses almost all of its by-products for human consumption, the vast majority of the volumes are used for animal feed and, to a lesser extent, for spreading or composting.

In conclusion, while the study shows that in addition to the Mc Cain industrial units located in the North of France and Belgium, the regions of Hauts-de-France, Nouvelle Aquitaine and Occitanie can supply large volumes of different types of co-products from agro-industrial processing. Many companies are looking for ways of adding value that are better than those that are mainly exploited today.

For the future production of packaging materials using these raw materials, the logistical challenges, in particular the location of production as close as possible to these resources, will be crucial to ensure the economic viability of the project.

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