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## ***Executive Summary***

### FEDIOL PEFCR for vegetable oils and proteinmeal products

In the course of 2021, FEDIOL commissioned VITO, Belgian research organization in the area of cleantech and sustainable development to create product environmental footprint (PEF) profiles of vegetable oil and protein meal products. The products covered include crude and refined oils and meals from soybeans, rapeseeds, sunflower seeds, maize germs and crude and refined oils derived from oil palm (including palm kernel) and coconut, and the refining by-products of the oils of all mentioned crops.

The life cycles covered include the acquisition of raw materials, the processing of these and the transport of the processed products to the customer. The acquisition of raw materials covered both cultivation as well as transport. The sixteen environmental impacts listed in the European Commission's PEF methodology are assessed together with biodiversity.

Next to these environmental footprint profiles, VITO also made category rules for the mentioned products (PEFCR) and an Excel tool allowing FEDIOL member companies to fill in data of their own crushing and/or refining process so as to be able to assess the environmental impact and hotspots of the life cycles of their own products and to compare the environmental footprint of these with the sector's average.

This study completed by VITO in 2022 builds on an ISO compatible life cycle assessment (LCA) of EU rapeseed and soybean crushing and rapeseed oil, soybean oil and palm oil refining carried out in 2013 by the Technical University Berlin for FEDIOL. That study established sector average data on the use of raw materials, other materials, water and energy needed to produce one ton of refined oil (Life Cycle Inventory dataset) and assessed the key potential environmental impacts associated with these. Product category rules (PCR) on respectively crude oil refining and oilseed processing were published. These however are outdated by now.

In the meantime, the European Union developed the product environmental footprint (PEF). Furthermore, according to the EU Green Deal, this method could sooner or later be used to help consumers making informed decision on the environmental impact of the products they purchase. This is already translating on the market in new customer requests. FEDIOL member companies are requested

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to provide environmental impact data of their products. This has triggered the ambition to extend the 2013 study to cover the full life cycle of the main products of EU oilseed processing and refining.

The 2022 VITO work is deviating in scope and method from the 2013 assessment, raising questions as to the insights that could be gained from a comparison between the two. Moreover, more production sites with different processing activities have participated this time, i.e. twenty-eight sites from ten companies, compared to twenty sites from six companies in 2013.

During the above work, the PEF Guidelines of 2019 were followed, whereby however it was not possible to reach full compliance with these. This was because the window for applying for a formal PEFCR project was closed. Therefore, alternative, yet reliable data sources had to be used. It also meant that the review was done by one instead of by three verifiers. In his review, Prof. Dr. Matthias Finkbeiner notes, "the PEFCR follows overall the Product Environmental Footprint (PEF), while full compliance was not intended."

Nevertheless, with the current work having been completed, the sector is better prepared for an upcoming EU legislative initiative which would involve the use of PEF methodologies as a basis for voluntary green claims or more generally sharing information on environmental performance. FEDIOL companies now have the tools to assess the environmental hot spots of their own products. They can also use a footprint method that is harmonised across the industry to respond to customer requests on the environmental impacts of their products.