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Introducing Product Environmental Footprint to Life Cycle Assessment experts in Azerbaijan



Background

In 2013, the European Commission (EC) published a recommendation on the use of a common methodology to measure and communicate the environmental performance of products and organizations. This recommendation was part of the European Union (EU) Single Market for Green Products (SMGP) initiative and came as a response to the endless list of “green” or sustainability-related labels that were leading to confusion for consumers and additional costs for those companies wishing to market their products as environmentally-friendly. Within the EU SMGP, over 280 volunteering companies and organizations learned about the requirements needed to calculate environmental footprint through either the Product Environmental Footprint (PEF) or the Organization Environmental Footprint (OEF).¹

Product Environmental Footprint (PEF) methodology

The PEF is a multi-criteria measurement of the environmental performance of a good or service throughout its life cycle. PEF information is produced with the purpose to reduce the environmental impacts of goods and services, considering their supply chain activities (from the extraction of raw materials, throughout production and use, all the way to the disposal of waste). In brief, PEF is the EU recommended tool, based on the Life Cycle Assessment (LCA) of a product or service, to quantify its environmental impacts. It does so by modelling the environmental performance of the flows of resources, materials, or energy, and by looking into the supply chain of the product to better identify waste streams associated with production.

The PEF method is closely tied to the LCA, but it is not identical to it. LCA is a standardized methodology quantifying environmental pressures, benefits, trade-offs, and improvement areas in the life cycle of a product. LCA looks at the product phases (such as production, transport, use, and end of life). Separately, PEF is a way of conducting the LCA, but with an added strength to deliver more consistent, reliable, and reproducible results. This is because the PEF methodology is less flexible than LCA, has more stringent requirements on data quality, and introduces weighting and normalization of databases which reduce freedom of interpretation.²

Promoting life cycle approaches in Azerbaijan

PEF and LCA are relevant methodologies that further promote life cycle thinking. This, in turn, can establish a collaborative environment among local and international experts and integrate life cycle approaches into national projects on climate change mitigation, renewable energy, and sustainable production and manufacturing, to name a few.

Recently, new potential drivers and application areas for these methodologies have emerging (including national environmental and sustainable development commitments).

They require holistic, life cycle-based approaches, as well as transboundary partnership projects, to incentivize the development of production processes.

The widespread use of resource efficiency and life cycle approaches can only be possible through the development of local capacity and by integrating these subjects into the curricula of higher education institutions (that could potentially serve as partners in multilateral development projects and provide technical expertise for industry and government agencies). Also, the establishment of a national collaboration network could bring together relevant stakeholders and provide a discussion and networking environment.

Challenges and opportunities in the application of LCA in Azerbaijan

Multinational enterprises have pioneered the application of LCA to various products to improve operational efficiency and gain a competitive edge (by manufacturing more sustainable products and communicating efforts via environmental labelling schemes). For example, the LCA performed by the Midwest Research Institute for the Coca-Cola Company beverage containers in 1969 is considered one of the first LCA studies conducted in Azerbaijan. Today, many large industrial companies have their own LCA specialists and can integrate the methodology into their research and development activities. The multinational corporations currently operating in the country are also top candidates and potential partners for the introduction and application of PEF studies, as this would further strengthen their commitment to the United Nations Sustainable Development Goals, particularly SDG 12 (responsible consumption and production), which requires member states to encourage companies (especially large and transnational ones) to integrate sustainability information into their reporting cycle. However, Azerbaijan also needs to adopt a national sustainability reporting policy to further support such efforts, as well as include Small and Medium-sized Enterprises (SMEs).³

Renewable energy companies are also an interesting example for piloting PEF, as they are expanding their operations in Azerbaijan and creating additional opportunities for the application of LCA. For instance, ACWA Power of Saudi Arabia recently signed an implementation agreement with the Ministry of Energy of Azerbaijan for developing and operating a 240 MW wind park project. Its diffusion technology would not only achieve sectoral productivity, but also the transfer of essential knowledge, innovation, and key practices and procedures. In addition, as these companies' value chains encompass direct operations in Azerbaijan, they create the possibility for future LCA and carbon/water footprint studies as part of their efforts to assess their global environmental impacts. However, these processes must be aligned with the companies' internal policies and dynamics in relation to their suppliers, partners, customers, competitors, and other relevant stakeholders. Hence, their decisions and actions are shaped by the macro-economic environment, which also includes education and training systems, science and technology, sectoral dynamics, regulations, and so forth.

Institutions that potentially could conduct PEF trainings for LCA experts

Throughout the years, international entities such as the European Union, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), USAID, or the Turkish Cooperation and Coordination Agency (TIKA) have progressively invested in projects in Azerbaijan that offer training on environmental

¹ Source: https://www.eu4environment.org/news/the-potential-applicability-of-the-pef-methodology-for-azerbaijani-enterprises/#_ftn1

² Source: https://www.meti.go.jp/committee/kenkyukai/sangi/lca/pdf/001_04_00e.pdf

³ https://www.eu4environment.org/news/the-potential-applicability-of-the-pef-methodology-for-azerbaijani-enterprises/#_ftn7

protection and organic agriculture. These could be further paired with national projects or academic institutions to better prepare professionals on topics related to environmental footprint or LCA. Such an institution could be the Azerbaijan State Agrarian University, located in Ganja, which has a department for organic agriculture that is insufficiently promoted or utilized. As a response, in 2017, the Ministry of Agriculture initiated special programmes to raise interest among students in the field of agriculture, as well as collaborations with the Ministry of Education to issue booklets on organic agriculture

New opportunities to teach and introduce LCA and PEF could also be found in national projects, such as GCP/AZE/006/TUR: Development of Organic Agriculture and Institutional Capacity Building in Azerbaijan. This project emphasizes training and awareness-raising in organic agriculture by educating lecturers and producers, and by developing various training tools. Within it, a special attention is paid to the general aspects of organic management, inspection, and certification, as well as to conversion to organic production of priority products for Azerbaijan.

The LCA experts can learn more not only from the training provided by educational institutions and development organizations, but also from companies that have different types of certificates of conformity in the country. These companies can potentially become the ones that could be accredited for eco-labelling certification and that could further pilot PEF. Currently there are no stakeholder in Azerbaijan that implement ISO certification type I (ISO 14024) ecolabelling programs. However there are several organizations which can potentially apply for it, among which the following ones have high potential:



GABA (Ganja Agribusiness Association) is the leading NGO involved in organic agriculture and IFOAM member since 2002



TÜV Austria Azerbaijan is the Baku branch of "TÜV Austria Group of Companies" which supplies the relevant certification program and was registered in Azerbaijan on September 22, 2017.



SGS is testing, inspection and certification company that have been operating in the Caspian region for 30 years, opening its first office in Baku, Azerbaijan, in April 1993.



DNV is a global provider of services for range of industries by combining its technology expertise and industry knowledge, with a special focus on the maritime and energy sectors.



Bureau Veritas was created in 1828. The company is involved in conformity assessment and certification services in areas of quality, health and safety, environment and social responsibility (QHSE).

Experts' participation and introduction of PEF concept among LCA experts

LCA Network for PEF studies needs to be established to conduct a survey among its members to understand the main gaps in LCA development in Azerbaijan. Potential gaps could be lack of experts and reliable data which may prevent further use of LCA in business. Thus, the Network needs to apply the following goals:

Create an environment of cooperation between companies interested in using LCA and PEF in Azerbaijan, allowing the optimization of resources

To educate and qualify companies regarding the concept, application, and the benefits of LCA and later on, the PEF methodology

To provide access to and disseminate LCA information in Azerbaijan through studies, good practices and specialists

To influence and support governments to create a local LCA and PEF database

A good deal of scientific work will be needed to improve and regularly update modelling and measuring environmental impacts. The network can be linked to an institution that have the representativeness in the field of sustainable development and that could give support to the Network for achieving its goals. Having a group of experts contributing to the development of life cycle tools or generating LCA and PEF data (for policymaking or companies) is a good basis to move towards a better understanding and managing the country's and companies' value chains.

How to use the PEF method under EU4Environment

Currently, in the Eastern Partnership (EaP) region, the PEF methodology is promoted as an activity led by the United Nations Industrial Development Organization (UNIDO), through the EU4Environment. Here, the planned work includes mapping existing practices and barriers to introducing PEF to the available labelling schemes, raising awareness and understanding of the opportunities and benefits of the SMGP Initiative through PEF, and leading the way to pilot and promote PEF in selected industries.

This will make the local stakeholders more aware of the potential benefits and impact of applying PEF, create local capacity in the EaP region, help the national industries to be better prepared for potential policies involving PEF, and provide learning opportunities for local experts (by using pilot studies and making concrete suggestions for a manufacturing shift towards more sustainable products). In addition, UNIDO will promote local awareness and capacity-building activities that contribute to the broader support of green efforts and policies. The learnings from this initiative are also used to formulate recommendations for enabling PEF-compliant studies in other regions outside Europe.

About EU4Environment

Since 2019, the EU-funded EU4Environment Action has been supporting Azerbaijan, alongside other EaP countries, in pursuing the path of green transformation.

The EU-funded EU4Environment Action aims to preserve and better use natural capital, increase people's environmental well-being, and stimulate greener economic growth in the Eastern Partnership countries. Its initiatives help deliver policy and legislative changes, make planning and investment greener, and stimulate the uptake of innovative technologies by adopting new business models and creating green jobs

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