

**TECH OFFER**

**Software for Supply Chain Sustainability Analysis**



**KEY INFORMATION**

TECHNOLOGY CATEGORY:

Infocomm - Big Data, Data Analytics, Data Mining & Data Visualisation

TECHNOLOGY READINESS LEVEL (TRL): **TRL7**

COUNTRY: **JAPAN**

ID NUMBER: **TO174920**

**OVERVIEW**

The term nature-positive describe a world where nature, species, and ecosystems are being restored and is regenerating rather than declining, which leads to an increased biodiversity, improved ecosystem services and reduced climate change impacts. The realisation of a nature-positive world has been hindered by economic, political, social and technological factors, as well as a lack of research on the impact of economic activities on natural capital and society at large.

One of the widely used approach to enable a nature-positive society is the quantification and evaluation of Scope 3 emissions and life cycle assessment (LCA) of natural capital or resources. Scope 3 emissions are indirect emissions that occur in the value chain of an organisation including emissions from the transportation of goods, the use of sold products, and the disposable of waste. Life cycle assessment is a methodology for evaluating the environmental impacts of a product or service throughout its entire life cycle. This includes the extraction of raw materials, the production process, the transportation, the use, and the disposal of the product or service. LCA can be used to identify opportunities to reduce the environmental impacts of a product or service.

A startup team based in Japan has developed a comprehensive assessment framework to enable environmental, social and governance (ESG) evaluation of products and services, tracing back through its supply chain. The assessment framework uses a combination of the inclusive wealth index (a metric for measuring the total wealth of a country, including natural, human, social, and produced capital) and environmental and social LCA to assign quantitative values to natural resources. The quantitative values were obtained from years of in-house research and product or services cost component data gathered by the team, providing ESG assessment and scoring of close to 16,000 products and services based on about 3,290 indicators of ESG ranging from human rights, wages, child labour, gender equality, greenhouse gas emissions to consumption of natural resources before the products are supplied in different geographies.

The assessment framework is developed as a software tool for the user to visualise a product's supply chain map. It could trace back not only direct suppliers but also secondary, tertiary and upstream suppliers to identify hot spots or high-risk areas for ESG indicators, allowing the user to prioritise and plan for the remediation actions. In addition, users may benchmark their level of achievement in ESG indicators with the industry average, identify their company's strengths and areas of improvements.

The startup team is seeking to partner corporations and municipalities that requires supply chain ESG assessment and natural capital evaluation. The startup team is also opened to explore co-development collaborations, e.g., to customise the platform for different industries.

## TECHNOLOGY FEATURES & SPECIFICATIONS

- The software tool provides the assessment framework that enables quantitative evaluation of the economic value of natural capital in terms of flows and stocks.
- Provides illustration showing the supply chain impact of close to 16,000 products and services based on about 3,290 ESG indicators, e.g., GHG emissions for Scopes 1 to 3 per TCFD, CDP, GHG Protocol guidelines. This helps to support companies in their ESG awareness, investor relations and prioritisation of remediation activities.
- Provides dashboard and benchmarking for the level of ESG impact relative to industry averages.
- Validity and reliability of the ESG assessment is verified and certified by a third-party international academic organisation, i.e., The Organisation for Sustainability with reference to ISO 14020:2000, ISO 14001:2015, ISO 14075 and SA8000 standards.

## POTENTIAL APPLICATIONS

The supply chain ESG analysis could be applied in various sectors including real estates and logistics that are becoming essential in major global markets. Quantitative evaluation of the economic value of natural capital in both flows and stocks could be applied in not just corporations but for countries and municipalities.

## UNIQUE VALUE PROPOSITION

Developing an impact assessment method that covers the impacts of nature, people, and man-made resources by extending the scope of LCA assessment, extending the inclusive wealth index used by national and local governments to corporate organizations, and enabling a plan-do-check-act (PDCA) cycle based on cross-referencing.