

## The Importance of Social Life Cycle Assessment (S-LCA) for the Oil Palm Industry

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### INTRODUCTION

Oil palm is a valuable economic crop. Its cultivation and processing provide employment to local community (Budidarsono *et al.*, 2012; Norwana *et al.*, 2011) and allow them to participate in the cash economy (Oxford Business Group, 2011). This often results in the improvement of the local infrastructure and basic social welfare services such as schools and health facilities. In some areas, the cultivation of oil palm has replaced traditional agricultural practices mainly due to the higher earning potential offered by oil palm cultivation. However, over the years the oil palm industry has been highly criticised for causing

several environmental sustainability issues such as climate change, land use change, cultivation on peat, watercourse pollution, *etc.* MPOB has embarked on a series of Life Cycle Assessment (LCA) studies covering the whole supply chain from cradle to grave since 2003. The whole study for the supply chain was completed in 2009 which was reviewed and endorsed by an external panel of experts. However, these LCA studies were purely environmental LCA (E-LCA) and did not touch on the other two aspects of sustainability which are the social and economy aspects. The oil palm industry is always scrutinised on its sustainability performance and so it is of utmost important to also gauge the social issues concerning the industry.

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Many social issues relating to the oil palm industry could contribute or have impact on the communities that depend upon the forests and agricultural land for their livelihood (Colchester, 2011). According to Colchester (2011) serious conflicts can occur when companies involving in palm oil businesses ignore the rights of the local communities in terms of land grab, social conflict, migration of work force, etc. In Malaysia, the land issue has become more complicated since land matters are placed under the state rather than federal jurisdiction. On the other hand, many positive social impacts can also arise from the existence and the recent advancement of the oil palm industry such as job creation, higher living standard and greater access to medical benefits and schools, rural development, etc. There are also many misconceptions and false claims that affect the image of the oil palm industry. In order to identify and also clarify the actual social issues that are really happening, a Social

Life Cycle Assessment (S-LCA) is needed. Not only can such a study identify the issues but also at the same time clarify the real scenario and the actual social issues that revolve around the oil palm industry. If needed mitigation steps can be carried out to overcome the identified social issues. Figure 1 shows the interrelated connection of LCA between social and the other two pillars i.e. environment and economy under sustainability (Ciroth and Franze, 2011).

### THE NEED OF S-LCA FOR THE OIL PALM INDUSTRY

With increased environmental and social concerns, the oil palm industry has been pressurised to redefine sustainability as part of a requirement in trade. In view of this, the LCA has been conducted for the whole palm oil supply chain. However, this study only addresses the environmental aspects of the oil palm industry. The next important pillar under sustainability is the people or



Figure 1. Sustainable development concept.

social aspect which needs to be addressed as the oil palm industry contributes the main economic backbone involving and affecting largely the people in the country. It is envisaged that the findings of this S-LCA study will assess the sustainability of the oil palm industry more holistically.

**E-LCA vs. S-LCA Approach**

E-LCA and S-LCA basically share the same approach with lots of similarities between them (UNEP, 2009). Both the assessments have system boundaries in accordance with the ISO framework (ISO 14040 and ISO 14044) where hotspot and data quality assessments are to be conducted. Besides, the assessments require iterative procedure and huge amount of data in addressing the social aspects of the study. When the findings are intended for public disclosure, peer review is encouraged. The resulting useful findings help in decision making, but does not judge if a product should be produced.

S-LCA complements E-LCA by providing a more holistic information on the life cycle of any product from the sustainability perspective (UNEP, 2009). In addition, S-LCA differs from E-LCA in its focus on social impacts. The differences between E-LCA and S-LCA are shown in *Table 1*.

In S-LCA, the impact assessment phase is still a challenge as there are no fully standardised impact pathways available.

**BENEFITS TO THE INDUSTRY**

The S-LCA study helps to identify the social issues pertaining the Malaysian oil palm industry. This increases the transparency of the oil palm industry on issues that relate to social impacts by making both positive and negative impacts more visible. This will become a pioneer scientific contribution to an upcoming field concerning a relevant product *i.e.* palm oil in emerging economies. It is hopeful that the S-LCA will be able to defend and potentially improve

**TABLE 1. DIFFERENCES OF ENVIRONMENTAL LIFE CYCLE ASSESSMENT (E-LCA) AND SOCIAL LIFE CYCLE ASSESSMENT (S-LCA) APPROACHES**

E-LCA	S-LCA
Commonly only uses quantitative data	Relies on semi-quantitative and qualitative data
Only requires quantitate data collection of the product life cycle (production and disposal)	Additional data collection on organisational aspects are required
The focus only covers environmental aspects	The focus is mostly on stakeholders, employees, community, society, consumers, company, <i>etc.</i>

Source: United Nation Environment Protection (2009).





the public and stakeholder perceptions of the Malaysian oil palm industry by demonstrating a proactive approach by providing scientifically credible information. At the same time, it benefits social development and scientific progress and is able to improve the social aspects of the oil palm industry. This study can provide fact-based information to defend criticism on 'emotional' social issues pertaining the oil palm industry.

### CONCLUSION

Sustainable development and consumer demands have made the environmental and social aspects of palm oil production a requirement in trade. In order to truly gauge the sustainability of any product or sector such as the oil palm industry, the social pillar definitely needs to be considered together with the environment and the economy as the oil palm industry largely involves and affects the people as well.

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