



2.4 Zero deforestation palm oil from Malaysia: the Ferrero experience

JOHANNES PIRKER, ALINE MOSNIER, GEZA TOTH, LAURA GIUSTARINI, KEMEN G. AUSTIN and LORANT PEUSER

Introduction

The rapid expansion of oil palm plantations in Southeast Asia has resulted in widespread negative impacts on biodiversity, carbon-rich forests and peatlands (Gunarso et al. 2013; Koh et al. 2011). Consequently, consumer goods companies are facing pressure from academics, civil society and consumers to ensure and transparently demonstrate that their palm oil supply chain is free of deforestation and other negative environmental and social impacts. By 2015, companies controlling more than 90% of internationally traded palm oil had made voluntary commitments to sourcing only zero deforestation palm oil (Bregman et al. 2016).

Ferrero, a confectionery firm based in Italy, has been a leader of this movement, pledging in 2013 to source 100% of its palm oils from sources certified under the Roundtable on Sustainable Palm Oil (RSPO) “segregated” scheme by the end of 2015. This means that the 180,000 tonnes of certified palm oil used in Ferrero products, produced on approximately 50,000 ha of plantations, is kept physically separated from “conventional” (uncertified) palm oil along the entire supply chain. This goal was achieved ahead of schedule in 2014, and since then Ferrero has put particular emphasis on grower-level traceability and the implementation of additional sustainability criteria. This resulted in the company’s Palm Oil Charter (Ferrero 2013), in which Ferrero committed to supplementary safeguards, including protecting high carbon stock forests and peatlands, high conservation value areas, human rights, and smallholder and worker interests.



UNDERSTANDING SUPPLIERS’
MOTIVATIONS CREATES THE
BEST CHANCES TO TRANSFORM
THE SECTOR.

Johannes Pirker and **Aline Mosnier** work for the International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria; **Geza Toth** and **Laura Giustarini** work for Ferrero Trading LUX S.A., Findel, Luxembourg; **Kemen G. Austin** works for Duke University, Durham, USA; and **Lorant Peuser** is an independent GIS expert in Balatonfüred, Hungary.

Making commitments count

Mapping plantations is the basis of reliable traceability along the supply chain, and provides enabling conditions to adhere to voluntary sustainability commitments. In the first half of 2016, Ferrero's global palm oil supply chain was composed of 447 estates across ten countries in Southeast Asia and in South and Central America, although nearly 90% of its supply was sourced from Malaysia, on more than 400 estates totalling about 580,000 ha. A small proportion of this — less than 5% of fresh fruit bunches — is produced by some 39,000 smallholders. Based on publicly available RSPO documents and data provided by suppliers, Ferrero mapped the boundaries of more than 300 of these estates, and acquired point data indicating the centre of the plantation for those estates where polygon data was not yet available. It should be noted that Ferrero monitors the entire plantation area, although the area from which it purchases amounts to only about 40,000 ha.

Besides monitoring current forest cover in a plantation, knowing about past land-cover changes is a key criterion for fulfilling sustainability commitments. In Malaysia, despite strict data secrecy legislation (*Official Secrets Act 1972*), there are a small number of freely available studies and datasets that track forest-cover change and palm expansion as far back as the 1970s. To construct the historical land cover trajectories in Ferrero's supplying plantations in Peninsular Malaysia, the Gunarso et al. (2013) dataset was used, spanning 1990–2010 (Table 1). The land cover dataset for 1973–2015 from Gaveau et al. (2016) was used for the Malaysian states of Sabah and Sarawak on Borneo (Table 2).

The majority of Ferrero's supplying estates are in Peninsular Malaysia, and deforestation inside these estates essentially stopped after the year 2000, when oil palm expanded into non-forest land such as cropland and shrubland rather than into forest (Table 1).



Table 1. Land cover (ha) in Ferrero estates, Peninsular Malaysia, 1990–2010

	1990	2000	2005	2010
Disturbed forest	61,268	10,385	8,349	5,084
Intact forest	444	208	203	203
Oil palm	211,045	246,719	262,201	282,936
Other non-forest	83,104	98,549	85,107	67,638

Source for land cover data: Gunarso et al. 2013

The oil palm industry expanded into Insular Malaysia more recently. Consequently, the decline in deforestation on estates in Sabah and Sarawak (Insular Malaysia) didn't begin until 2005 (Table 2).

Table 2. Land cover (ha) in Ferrero estates, Insular Malaysia, 1973–2010

	1973	1990	1995	2000	2005	2010
Sabah (Insular Malaysia)						
Forest	1,755	—	—	1,223	1,144	1,134
Oil palm	71,004	92,556	116,213	138,961	168,283	168,981
Other non-forest	100,691	80,893	57,237	33,265	4,023	3,334
Sarawak (Insular Malaysia)						
Forest	4,191	—	—	953	946	938
Oil palm	5,130	5,130	5,130	27,879	46,122	46,528
Other non-forest	42,549	46,741	46,741	23,039	4,803	4,405

Source for land cover data source: Gaveau et al. 2016

Determining the exact boundaries of estates is not always possible, given that some suppliers change from one year to the next while others remain over several decades. Instead, obtaining point data that indicates the approximate location of an estate is a first step to mapping a supply chain, especially as the availability of this data is better for both estates and smallholders. Ferrero's analysis of the 40 estates, represented by point data for Insular Malaysia, suggests that these were cleared before 2000, and that no deforestation occurred after that.

What has worked so far...

Ferrero has made substantial efforts toward mapping their supply chain. The company has been mostly successful at encouraging suppliers to provide maps of the boundaries of oil palm estates. This allows the company to assess its environmental performance, as a major first step toward tracking its commitments to voluntary sustainability. Combining this data with freely available land-cover information, Ferrero was able to analyze historical land use inside its supplying plantations. The company found that the estates that supply it have high initial deforestation rates, but that these rates slow after 2000 and become essentially zero after 2005. This suggests that Ferrero is working with suppliers to meet sustainability requirements and avoiding suppliers that do not meet them.

... what is still to be done

The availability and quality of geospatial information are not consistent. Also, although official RSPO documents are available for certified mills — such as Mill Certification, Annual Communication of Progress reports (ACOP) and the Annual Surveillance Audit (ASA) — in many cases these do not report the coordinates of plantations consistently. Data quality is still an issue often raised by RSPO stakeholders, since significant inconsistencies appear for a number of estates when comparing the boundaries sourced from RSPO and the data acquired from plantation managers. The majority of point coordinates acquired from RSPO provide information to the gate or the centre of a palm oil concession. Further, geospatial data is not available for all estates. Malaysian growers claim they want to share their digital maps but cannot, because doing so would break the law (the country's *Official Secrets Act 1972*).

Traceability challenges

The biggest challenge for the food manufacturing industry is to achieve and maintain full traceability and keep up supplier engagement over time. The latter is particularly difficult because of a changing supply chain and the fact that certified sustainable palm oil is not the core business of the largest palm oil producers. Traceability to palm oil mills is provided by RSPO because Ferrero uses 100% segregated oil. However, traceability to grower level, commonly known as traceability to the fresh fruit bunches (FFBs), is a complex exercise that requires close collaboration between the consumer company and all tiers of the supply chain.

Indeed, palm oil supply chains are characterized by a multi-tier context. Tracing the origin of specific refined palm oil shipments requires that suppliers are willing to collaborate and provide full transparency regarding their suppliers. Compiling traceability information can be time consuming, and appropriate verification of the data is possible only once the supplier's internal accounting has been completed, which can take up to four months.

Undoubtedly, the most important element in reaching full FFB traceability is engagement with suppliers. A constructive approach helps facilitate a mutually agreeable situation and long-term benefits for both producer and consumer companies. Ferrero has been very successful in establishing a well-functioning relationship with its suppliers, which has created new opportunities for mapping supply chains and improving data quality.

Nevertheless, a major task remains – maintaining FFB traceability. Changes in the supplier base are inevitable; for example, because of the voluntary or compulsory suspension of a supplier's RSPO certificate, there is an immediate need to select a new supplier. In this case, trusted and verifiable suppliers have priority, and it becomes necessary to collect significant traceability data. There are many ways to select a trusted supplier, and different risk assessment methods are available. This article makes the case for an approach that is based on systematic and evidence-based assessment of land-use change observed on plantations in recent years.

In this context, an important achievement of zero deforestation initiatives — once they are fully functioning — is to put pressure on the sector by out-competing those suppliers that are not willing or able to deliver reliable data on the location of their estates and any other traceability information. Geospatial data will be useful for evaluating potential suppliers on the basis of assessing the extent and timing of past deforestation on their estates. Ideally, any consumer company could perform this process prior to a commercial engagement with a supplier. Geospatial data can also be used to monitor estate areas in near real-time for changes in land use. Ideally, this monitoring would be done in close collaboration with growers to provide them with an early warning system in case signs of deforestation start to become apparent.

Lessons learned

Zero deforestation initiatives should learn from existing programmes when it comes to implementation. This includes adopting key elements of other sustainability initiatives such as FSC, the Brazilian Soy Moratorium and RSPO. Crucial elements are the definition of “forest” and “deforestation” and defining a reference date against which deforestation is measured. Defining a reference date is crucial for an initiative acting in a region where forests have dwindled rapidly, as has been the case in Malaysia.

A specific date when deforestation starts to be counted is often missing or defined very vaguely or late in many companies’ zero deforestation pledges (e.g., Austin et al. in press). For instance, if a company pledges to be deforestation-free by 2020, it is not clear from the outset whether it can source produce from areas cleared between now and 2020, let alone areas cleared in the recent past. The pledge might therefore potentially create a perverse incentive to accelerate clearing before 2020 in order to secure the supply base before the commitment comes into force.

In contrast, establishing a clear definition of the cut-off date as part of a company’s zero deforestation pledge will prevent this perverse incentive. In the case of Ferrero, certification to RSPO standard forbids deforestation in its plantations after the year 2005. The company’s voluntary zero deforestation pledge and management practices on the ground are in line with this date.

Further steps

Of the consumer goods manufacturers that currently lead the scorecards of prominent NGOs such as Greenpeace (Greenpeace 2016) and WWF (WWF 2016) for their responsible sourcing, transparency and industry reform impacts, few have traceability to fresh fruit bunches. Ferrero is among the best performing companies in this respect, at close to 100% traceability. Nevertheless, the company is still in the middle of a long journey to holistic sustainability practices, and much more remains to be done in terms of its zero deforestation policy and the wider dimension of climate change protection and social sustainability compliance of the palm oil supply.

Ferrero has highlighted the following key areas that require further work. Full supply chain mapping needs to be completed and the results need to be improved and streamlined. More efficient ways need to be found to map the smallholders who sell produce to different mills every year, which causes rapid changes in the buyer's supply base.

- Public attention has focused very much on deforestation, causing a search for land that is naturally void of forests; but this might in some cases include potentially carbon-rich grasslands whose carbon capturing capacity might be similar to that of forests or other natural lands with high conservation value.
- Although suppliers and RSPO auditors report that the supply chain is free of peatland, reliable peatland data is scarce. Given the expected progress in mapping peatland reliably, a systematic assessment of peatland in the supply chain will be carried out.
- Ferrero has launched a close-to-real-time forest monitoring programme that has yielded promising first results, and this should be extended to the full supply chain. Ideally and in addition, forest and grievance monitoring should be carried out by and in collaboration with palm oil suppliers.

Conclusions

Certification is good, but traceability to the farm level is better. Establishing and maintaining this traceability is widely seen as the responsibility of consumer goods companies. Although mill-level information is transparent in fully segregated supply chains, grower-level traceability requires negotiations and supplier engagement. This task can be further complicated by national legislation on data protection and suppliers who might be reluctant or simply not have experience in providing this kind of information. Also, relevant data is not available for all suppliers and often has varying quality. Against this backdrop, the market force of zero deforestation commitments pledged by consumer companies and traders are expected to introduce a new standard with respect to availability and quality of data suitable for assessing environmental performance along the supply chain. Geospatial data based on satellite and radar images will continue to be a key resource for selecting suppliers, planning for deforestation-free supply chains, and ex-post evaluation of suppliers' environmental performance. And notably, existing and emerging remote sensing data are becoming more affordable or free.

Zero deforestation pledges should be streamlined with existing initiatives from inside and outside the palm oil sector, and must build on the experience of these initiatives when it comes to implementation. Key elements — such as defining “forest” and “deforestation” and defining the reference year for measuring zero deforestation — are essential to making companies' zero deforestation pledges tangible. It will also be interesting to see the extent to which internal zero deforestation pledges and certification become complementary or competing schemes.



References

Austin, K.G., A. Mosnier, J. Pirker, I. McCallum, S. Fritz and P.S. Kasibhatla. In press. "Making the Case for Forest Benchmarking in Zero-Deforestation Commitments: The Case of Oil Palm in Indonesia." *Land Use Policy*.

Bregman, T.P., K. McCoy, R. Servent and C. MacFarquhar. 2016. *Turning collective commitment into Action: Assessing progress by Consumer Goods Forum members towards achieving deforestation-free supply chains*. Global Canopy Programme and CDP, UK.

Ferrero. 2013. *Palm Oil Charter*. www.ferrero.com/group-news/Ferrero-Palm-Oil-Charter.

Gaveau, D.L.A., D. Sheil, Husnayaen, M.A. Salim, S. Arjasakusuma, M. Ancrenaz, P. Pacheco and E. Meijaard. 2016. "Rapid conversions and avoided deforestation: examining four decades of industrial plantation expansion in Borneo." *Scientific Reports* 6:32017. doi:10.1038/srep32017.

Greenpeace. 2016. *Cutting Deforestation out of the palm oil supply chain — Company scorecard*. Amsterdam, the Netherlands: Greenpeace.

Gunarso, P., M.E. Hartoyo, F. Agus and T. Killeen. 2013. *Oil palm and land use change in Indonesia, Malaysia and Papua New Guinea*. Singapore: Round Table on Sustainable Palm Oil.

Koh, L.P., J. Miettinen, S.C. Liew and J. Ghazoul. 2011. "Remotely sensed evidence of tropical peatland conversion to oil palm." *Proceedings of the National Academy of Sciences of the United States of America* 108(12):5127–5132.

WWF (World Wildlife Fund). 2016. *Palm Oil Buyers Scorecard: Measuring the progress of palm oil buyers, 1–59*. WWF.