

OIL CROPS AND SUPPLY CHAIN IN ASIA LA FILIÈRE OLÉAGINEUSE EN ASIE

Certification, labelling and traceability of palm oil: can we build confidence from trustworthy standards?

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Abstract – The present article is aimed at presenting various types of certification standards which are presently – or could be – applied to the production of palm oil. Doing so, it provides an overview of the existing mechanisms under way both at the European and global level and it addresses the controversial issue of reliance and accuracy of certification standards. The RSPO certification scheme provides an interesting example of such controversies. The case of palm oil reflects the recurring issue of mandatory *vs.* voluntary standards and the underlying question of the respective role of public *vs.* private stakeholders in the designing and further implementation of such standards. The high number of standards, appellations or labels creates some – understandable – confusion amongst consumers and deciders and this point is of paramount importance if confidence is on the agenda. The authors conclude on the urgent need for collaborative and multidisciplinary research in order to provide certification standards with science-based evidence and thus strengthen their reliability. The success of a certification scheme depends also greatly on the ability of stakeholders to gain a premium price to offset the incurred costs.

Keywords: Certification / labelling / traceability / palm oil / RSPO

Résumé – **Certification, étiquetage et traçabilité de l'huile de palme : pouvons-nous construire des normes dignes de confiance.** Le présent article vise à présenter différents types de normes de certification qui sont actuellement – ou pourraient être – appliquées à la production d'huile de palme. Ce faisant, il donne un aperçu des mécanismes actuellement en cours, tant au niveau européen que mondial, et aborde la question controversée de la solidité et de la précision des normes de certification. Le système de certification RSPO fournit un exemple intéressant de ces controverses. Le cas de l'huile de palme reflète le problème récurrent des normes obligatoires *versus* volontaires et la question sous-jacente du rôle respectif des acteurs publics *versus* privés dans la conception et la mise en œuvre de ces normes. Le grand nombre de normes, d'appellations ou de labels en vigueur crée une certaine – et compréhensible – confusion chez les consommateurs et les décideurs : un élément d'une importance capitale si la confiance est à l'ordre du jour. Les auteurs concluent sur le besoin urgent en recherches collaboratives et multidisciplinaires afin de consolider les normes de certification à l'aide d'un socle solide de preuves fondées sur des résultats de recherche de renforcer leur fiabilité. Le succès d'un système de certification dépend aussi grandement de la capacité des parties prenantes à des prix finaux plus élevés, afin de pour compenser les coûts engendrés par la certification.

Mots clés : Certification / étiquetage / traçabilité / huile de palme / RSPO

1 Introduction

In the context of an increasingly globalised economy and the subsequent tendency to the homogenisation of food habits

and to diet convergence (Brunelle *et al.*, 2014; Inglis and Gimlin, 2015), not only the consumers, but also the traders and investors are looking for trustable and easily recognisable quality standards for food products.

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Even if such standards are fairly developed in Europe, which has designed appellations certifying original production areas and processes in a pioneering way, developing markets

in emerging countries still lack such types of safe and legal guarantees (Gereffi and Lee, 2012).

2 Europe at the forefront of Appellations of Origin

There is a European history of identifying and labelling food according to geographical origin, ingredients and fabrication processes. Indeed, France is quite the homeland of “Appellations of Origin of food” which became “Signs of quality” eventually recognized at the European level (January 1st, 2007, EU Regulation 510/06). Such signs of quality can now be adopted by all countries in the world (Sylvander *et al.*, 2007).

Four standards are presently of legal significance and they are applied as appellations of origin, they are namely: *Protected Designation of Origin* (PDO), *Protected Geographical Indication* (PGI), *Organic Agriculture* and *Traditional Speciality Guaranteed* (TSG). The French public is the most sensitive to signs of quality, showing an impressive 50% rate of recognition.

Such standards are efficient at protecting all stakeholders involved in a specific food chain against illegal copies of the final product or its production process; they do attest that stakeholders are following good practices, that they are working inside a specific area and that there is an original history for the product. Stakeholders are thus protected by the European regulation.

The *PDO (Protected Designation of Origin)* standard refers to agricultural or food products originating from a region whose quality or characteristics are essentially or exclusively due to the geographical environment (including natural and human factors) and for which the production and processing take place in limited geographical area. PDO is granted when the food comes from an agricultural resource that is completely transformed on the spot (origin).

The most famous examples are French wines such as Champagne which is the name of the region where the wine is produced.

PGI (Protected geographical indications) are awarded to products which are processed on-site but might be blended with some external ingredients. PGI refers to an agricultural or food product originating from a region with a given quality, reputation or any other characteristics which can be attributed to this origin; also, the production and/or processing stages must take place inside the defined geographical area. At least one of the stages of production, processing or preparation takes place in the area.

The list approved by European Commission is provided by the DOOR database. In class 1.5 of this database which registers all fats and oils are listed the most recent registered oils and fats, *i.e.* Butter from Bresse (France, PDO), olive oil from Emporda (Spain, PDO) or from Sicilia (Italy, GPI)... Both PDO and PGI are the only standards which refer to the origin and therefore are linked with to the *terroir* (Barham, 2003).

TSG (Traditional Speciality Guaranteed) does not refer to any origin but rather guarantees the protection against fraud of the traditional composition of a product or a traditional production method. It highlights traditional characteristics, either in the composition or means of production. In the sector of

oils and fats, the *Camelina* oil of Rydzowoy from Poland was recently registered (Official Journal L151 16.06.2009).

A recent study commissioned by the EU (Arete, 2013) assessed the added value of PDO and PGI products and showed that in most cases, certified products could gain premium prices in comparison with traditional products. However, the use firms make of the protected GI is in many cases far away from its potentiality and this clearly affects the effects GI protection can exert (Beletti *et al.*, 2014).

Organic Agriculture appellation protects a production system which fulfils criteria regarding soil, plant, animal and therefore humans. It tends to follow natural laws by excluding the use of almost all chemical fertilizers, synthetic pesticides, herbicides, hormones and genetic manipulation. It only authorizes the use of natural fertilizers such as compost, rock powders, organic fertilizers or plant extracts. In 2007, the European Council of Agricultural Ministers agreed on a new Council Regulation (UE Regulation No. 834/2007) setting out the principles, aims and overarching rules of organic production and defining how organic products must be labelled. The list of synthetic resources and inputs that are permissible can be found in the annexes of the EU Regulation No. 889/2008.

GMOs in food: the regulation on genetically modified food and feed lays down a threshold (0.9%) under which the GMO content of a given product does not have to be specified and labelled. Products with GMO content below this threshold can be labelled as Organic. In Europe, GMOs must be analysed by an experts' committee one by one. Indeed, even if a given 2007 sequence was assessed and accepted for one specific GMO this is not sufficient to authorize another plant harbouring the same genetic modification.

Aprile *et al.* (2012) assessed consumers' preferences and willingness to pay for European Union (EU) geographical indication quality labels (Protected Designation of Origin (PDO) and Protected Geographical Indications (PGI)), organic farming label and other product quality cues. Using a choice experiment, random parameter logit model and olive oil as product of interest, results suggest that respondents are willing to pay the highest premium price for a product with a PDO label, followed by organic farming label, a quality cue describing the product as extra-virgin olive oil and then a PGI label.

Whether organic agriculture can continue to expand will likely be determined by whether it is economically competitive with conventional agriculture. Crowder and Reganold (2015) recently analysed the financial performance of organic and conventional agriculture from 40 years of studies covering 55 crops grown on five continents. These authors found that, in spite of lower yields and intensive use of tractors or labour, organic agriculture was significantly more profitable than conventional agriculture and has room to expand globally. Moreover, with its environmental benefits, organic agriculture can contribute a larger share in sustainably feeding the world.

The European Database of Origin & Registration (DOOR) contains food names registered as a protected designation of origin (PDO), protected geographical indication (PGI) and traditional specialty guaranteed (TSG). Since 2007, EU registered a total of 1528 products. As example there are 250 cheeses, 175 fresh meats and 22 beers. One can also find 142 oils and fats which are labelled (PDO and PGI),

accounting for a total market of 346 million euros in 2010. France was the first seller with 129 465 million euros in 2010 (Europa agriculture, 2016). As an example, the production value of the olive oil marketed using a protected designation of origin or protected geographical indication from 2006 to 2008 was 215 million Euros per year (Economic analysis of the olive sector, 2012).

3 Geographical Identification schemes are expanding worldwide

The appellation system is being exported to emerging and developing countries under the leadership of Cirad and Inao (Institut National des Appellations d'Origine), the French agency responsible for identification, quality and origin in France since January 1st, 2007. A legal system aimed at protecting, certifying and branding food products has indeed some advantages that can be used in this type of countries (Zhao *et al.*, 2014; Bienabe and Marie-Vivien, 2015).

The designation process of Geographical Identification (GI) requires the creation of a union-type association in order to defend the product of interest, and this step is of paramount importance in countries where producers tend to work individually. The establishment of an association makes stronger the defence and promotion of the identification. In addition, the control of the product compliance made by the members themselves induces directly a boost in product quality. The branding tends to have a positive impact not only on the selling price of the product but also on the income of the farmer and the processor (Linnemer and Perrot, 2000). In a recent study, Durand and Fournier (2015) recognized the legitimacy of public intervention in GI development, at least as long as producers' awareness of GIs will remain low. However, this State intervention should not only let enough space for producers in GI governance, but also design a frame for arousing their interest and adhesion and for facilitating their collective involvement. That may be facilitated by a concrete and clearly established decentralization of competences in national policies.

In order to ensure fair trade and the development and promotion of food production labels (appellation of origin, protected geographical indication), it becomes essential to know and ensure the nature and geographic origin of food products. The protection of Geographical Indications (GIs) is being increasingly explored worldwide as a tool for supporting local sustainable development. Focusing on wine and coffee value chains, Belletti *et al.* (2015) recently set out in what way GI protection schemes can contribute to the provision of public goods, and illustrated how this contribution is being threatened by different failures that may occur within both valorisation strategies and legal protection policies. By examining how private, collective, and public interventions front these failures, the authors suggested a more comprehensive policy approach, to ensure GIs' contribution to sustainable development.

At International level and precisely in SE Asia, there are discussions on several agreements with different countries concerning food trade and protection of geographical indications such as Korea, Vietnam, Laos... with the twin objectives to protect their products and to avoid competition with European products (Free Trade Agreement, 2011).

4 The EU legal framework on traceability

The European Commission – through Article 18 of Regulation 178/2002, which came into effect on January 1st 2005 – requires food consumed or exported to the EU to be traced.

Indeed, the Article states that:

- i. The traceability of food, feed, shall be established at all stages of production, processing and distribution.
- ii. Food business operators should be able to identify anyone who provided their food, or any substance intended to be incorporated into or may be incorporated in foods or in feed.
- iii. Food business operators have systems and procedures to identify companies that their products have been provided. This information is made available to competent authorities at their request.
- iv. Food and feed which is placed on the market in the EU have likely to be labelled or identified adequately to facilitate its traceability, through relevant documentation or information.

The batch size of product to be tested will be defined by the manufacturer depending on the risk and the responsibility he is ready to endorse in case of hazards. The goal is to eliminate as soon as possible the hazard without jeopardizing business activities. The role of the exporter is to define the smallest batch that he would eliminate in case of problem. For example, if a batch of palm oil is contaminated with polycyclic aromatic hydrocarbons (PAHs; Lacoste, 2014), the exporter could remove a batch of containers, a pallet or a silo, and this will not cost the same of course. When a product presents a little risk, the batch layout will be necessarily larger.

According to the European Food label regulations, palm oil must be listed as “vegetable fat” or “vegetable oil”. From December 2014, food producers who are incorporating vegetable oils in their preparation are required to list the specific source of vegetable fat which is used in their food products. Vegetable fats and oils could be identified on label under the term “vegetable fats” or “vegetable oils” but this must be followed by the type of vegetable origin (*e.g.* palm oil, sunflower oil or coconut oil...) and the sentence “in varying proportions”.

On 20–21 September 2016, the EU and Indonesia kicked-off negotiations on the Comprehensive Economic Partnership Agreement (CEPA) in Brussels. CEPA must also provide a framework with respect to the sustainability criteria applied to vegetable oils, particularly palm oil. On 15 September 2016, in the context of palm oil and biofuels, the EU General Court delivered its decision annulling EU tariffs against Argentinian and Indonesian biodiesel. In 2013, the Council of the EU had issued *Council Implementing Regulation (EU) No. 1194/2013 of 19 November 2013* imposing a definitive anti-dumping duty and collecting definitively the provisional duty imposed on imports of biodiesel originating from Argentina and Indonesia. Biodiesel in Indonesia is almost exclusively produced from crude palm oil (CPO) and, after a complaint by the European Biodiesel Board, the Commission investigated the matter and concluded “[...] that the imports of biodiesel produced in Indonesia [...] were dumped”. However, the EU General Court found that it was “not apparent from the file that the CPO price

was directly regulated in Indonesia” and that “[...] it must be considered that the institutions failed to establish to the requisite legal standard that there was applicable distortion of the price of CPO in Indonesia [...]”. Apart from the recurring anti-dumping proceedings, palm oil-based biofuel continues to have difficulty being recognised as “renewable” under EU law, and is not included in biofuel blending targets.

Additionally, “no palm oil” labels on food products are clearly violating the EU’s Food Information Regulation (*i.e.*, Regulation (EU) No. 1169/2011 on the provision of food information to consumers) with “self-evident” or “misleading” statements.

5 Certifying sustainability in the oil palm chain: how sustainable is sustainable?

5.1 Sustainability is covered by a multiplicity of standards

Since the Roundtable on Sustainable Palm Oil (RSPO) created the first sustainable palm oil certification scheme in 2004, a range of other industry and government initiatives aimed at preventing deforestation due to oil palm expansion were developed and implemented over the years. Ivancic and Koh (2016) recently reviewed the various sustainability standards at stake in SE Asia and they concluded that emerging themes in the evolution of sustainable palm oil include a greater recognition of the complexity of the issue, the importance of maintaining true transparency, and a greater consideration of indigenous land rights. These authors stated that manufacturing companies and consumers are beginning to see the power that they hold when choosing to purchase CSPO (Certified Sustainable Palm Oil, through RSPO standards), so greater awareness and education are key to further improvements.

The Sustainable Palm Oil Transparency Toolkit (SPOTT) a project from the Zoological Society of London (ZSL) provides information and resources to stakeholders in the palm oil industry in order to reduce its negative environmental impacts. SPOTT’s publishes updated assessments for 50 of the largest palm oil-producing companies worldwide using only publicly available information on disclosure of their operations and their commitments to environmental and social best practice.

A study was recently developed by Efeca (2016) in order to outline the key differences between the standards and provide aid to buyers’ decision making. This work outlined that on social themes, RSPO ranks highly as has the most comprehensive Social Impact Assessment (SIA) requirements, strongly emphasizing a participatory process. Noticeably ISPO and MSPO do not have cut-off dates for applicability for any criteria. RSPO also was found to impose the strongest biodiversity measures, relying heavily on the HCV process, while ISPO appears to provide the least stringent overall protection for biodiversity. Finally the authors found that the greatest difference between RSPO and ISPO/MSPO was the inclusion of directives on business practices and plantation management, requiring a commitment to transparency and ethical conduct in business operations and transactions, which was not an explicit principle in ISPO/MSPO.

5.2 The Roundtable on Sustainable Palm Oil (RSPO) initiative

When it was launched in 2004, RSPO was a business-to-business initiative bringing together about 10 members, both private actors in the industry (such as Unilever) and NGOs (such as WWF). It is an international, multi-stakeholder initiative to certify and promote sustainable palm oil. In November 2005, eight principles and 39 criteria for certification were approved (RSPO P&Cs) and they led to certification of the first plantations in 2008, then the first batch of Certified Sustainable Palm Oil (CSPO) was sold at the end of 2008.

The Roundtable has now reached 3,000 members, divided into seven categories: growers, processors and traders, manufacturers, banks and investors, retailers, environmental/nature conservation NGOs and social/developmental NGOs.

The eight principles of RSPO certification

1. Commitment to transparency.
2. Compliance with applicable laws and regulations.
3. Commitment to long term economics and financial viability.
4. Use of appropriate best practices by growers and millers.
5. Environmental responsibility and conservation of natural resources and biodiversity.
6. Responsible consideration of employees, and of individuals and communities affected by growers and mills.
7. Responsible development of new plantings.
8. Commitment to continuous improvement in key areas of activity.

Today, the production of CSPO (Certified Sustainable Palm Oil) has reached 17% of global production (*i.e.* 11.4 Mt; compared to 620 000 tons in 2008), thus covering 2.8 million ha of RSPO-certified area (as compared to 106 000 hectares in 2008) located mainly in Indonesia, Malaysia and PNG.

The Roundtable harbors various working groups through which it carries out, diversifies and enhances its activities. As an example, two successive science-based working groups on greenhouse gas (GHG) have been active in RSPO between 2009 and 2011 with the aim of identifying ways leading to meaningful and verifiable reduction of GHG emissions. One of the outputs was PalmGHG, a GHG calculator using the LCA approach to quantify the major sources of emission and sequestration for a mill and its supply base (Bessou *et al.*, 2012). National or regional interpretation groups are responsible for integrating the certification principles and criteria into national legislation.

Daviron and Vagneron (2011) pointed out that, beside these limited attempts aiming a rebalancing the distribution of value within the chain, what is really at stake is the inclusion of this issue in the agenda of multi-stakeholders roundtables such as RSPO that are supposed to elaborate universal (or hegemonic) standards. They suggest that such changes would need a better representation of governments and producer organizations. Indeed, its detractors criticized the RSPO for the lack of participation by governments from the moment the Roundtable was set up.

Furthermore, there is still some way to go before RSPO P&C are adapted to the specific constraints of family farmers; the cost of certification and corrective action, estimated at US\$

20–40 per hectare is often prohibitive for smallholders who are barely, if at all, organized into cooperative arrangements (WWF, 2012). In a recent study, Brandi *et al.* (2015) outlined that smallholders, and specifically independent smallholders, often lack both the information and the degree of organization that certification demands. The authors identified the most important compliance challenges for independent smallholders in relation to land titles, seedlings, pesticide usage, fertilization, and documentation and outlined how smallholders can be supported so that they can be included in certification schemes.

Like a large number of multi-stakeholders initiatives devoted to the promotion and standardization of a sustainable product (Forest Stewardship Council, Marine Stewardship Council, Round Table on Responsible Soybean, BonSucro), the RSPO receives considerable criticism. The initiative is based on the voluntary acceptance, by consensus of all members, of its principles and criteria and is therefore considered not rigorous enough and lacking in power (Laurence *et al.*, 2010).

The fact that RSPO certification is unable to protect the rights of indigenous people in terms of land rights, compensation for land annexing and respect for customary law has also been highlighted. As happened in the case of Forest Stewardship Council (FSC) certification for timber, the RSPO Principles and Criteria, which were designed to be consensual and universal, have become very difficult to apply and therefore of limited use in complex local contexts, like in Indonesia, where land ownership conflicts are not settled by the State but at district level. This means that on one side we have a set of directives based on the logical approach of the North and on the other we have a local authority which may have little awareness about sustainability, feels the pressure of development and is therefore in a precarious position. Negotiations are necessarily unbalanced and the process of certification does not succeed in protecting the rights of indigenous people. This puts the credibility of the whole process of certification at stake (McCarthy, 2012).

Ruyschaert and Salles (2014) questioned how effective RSPO was in attaining its claimed conservation as this is central to justifying its existence. The authors found five shortcomings explaining poor outcomes regarding the protection of the forest area, and especially the orangutan habitat: financial compensation too small, too much room for interpretation in the guidance document, postponement on contentious issues, non-integration of RSPO within the socio-politico-legal Indonesian context, and finally the lack of effective external control system. As these shortcomings complement each other, the effectiveness of the scheme is dramatically reduced for biodiversity conservation. The authors suggested that the conservation of biodiversity, and especially orangutans, will require oil palm sector reform which would include reincorporating the state into the scheme and changing the approach supporting local development in a sound socio-ecological regional planning.

Ironically, it is the public authorities in each country which have the task of translating the RSPO Principles and Criteria into legislation in conformity with their respective constitutions (Rival and Levang, 2014). They are also responsible for applying these laws effectively in the field and of enforcing sanctions against offenders. It is all well and good to draft

a highway code but it is not worth the paper it is written on if there are no incorruptible and trustworthy policemen at the side of the road, responsible for ensuring that it is respected!

Finally, the market share of certified crops remains limited even if, as in the case of oil palm, it is growing rapidly. To date no more than 2.5% of world cane sugar is *BonSucro* certified, as compared to 17% of palm oil sold under the CSPO label. In the case of palm oil, the paradox lies in the fact that many processors and distributors in the North only committed themselves to using 100% CSPO certified oil by 2015 (now by 2020. . .) when they could be doing it right now because about half (48%) of the certified oil available on the market is not being bought up. The goodwill expressed by consumers is taking its time to bring about change in the supply chain of processors and distributors in the North. There is no denying that the supply network is extremely complex. The first positive impact of certification has been to map and identify the networks of suppliers and intermediaries.

Processors may choose among four strategies for the purchase of CSPO certified sustainable oil, which differ in terms of strictness and cost of implementation. The price of certified oil is fixed according to supply and demand. The producer's premium depends on the certification system used by the supply chain. On average, US\$1 per ton goes to the RSPO and \$2 per ton cover administrative expenses.

For the end consumer, the wording of the label is not impartial and can cause some confusion: in some cases the product bought may only physically contain a limited amount of certified sustainable palm oil.

Processors have four possible strategies, as set out below.

- i. *Book and claim* (Fig. 1): producers and retailers incorporating palm oil in their products bid on-line for GreenPalm™ certificates and, through RSPO, pay a premium directly to the producers designed to encourage sustainable production and to finance the certification of new members. The GreenPalm™ certificates do not claim that the product contains raw material which has been produced sustainably but that its use supports sustainable production. These certificates show the commitment of retailers to sustainable production at the beginning of the production chain. The retailers can state this on their declaration of social responsibility, their packaging, at their point of sale and on their internet site. The RSPO announced in July 2016 that RSPO's endorsement of GreenPalm™ will end in December 2016. Instead, the Book and Claim supply chain model will be supported by the trade of RSPO Credits. Labelling: "Contributes to the production of certified sustainable palm oil, www.rspo.info".
- ii. *Mass balance* (Fig. 2): overseen by UTZ Certified, this certification corresponds to the use of a blend of sustainable and non-sustainable palm oil at any stage of the supply chain, providing global quantities at the company level are checked. The model is setup in such a way that the amounts of CSPO which leave the plantation never exceed the quantities received by the consumer. The purchase and sale of CSPO and its by-products are checked independently. There is no requirement for separate storage or verification in the production process.

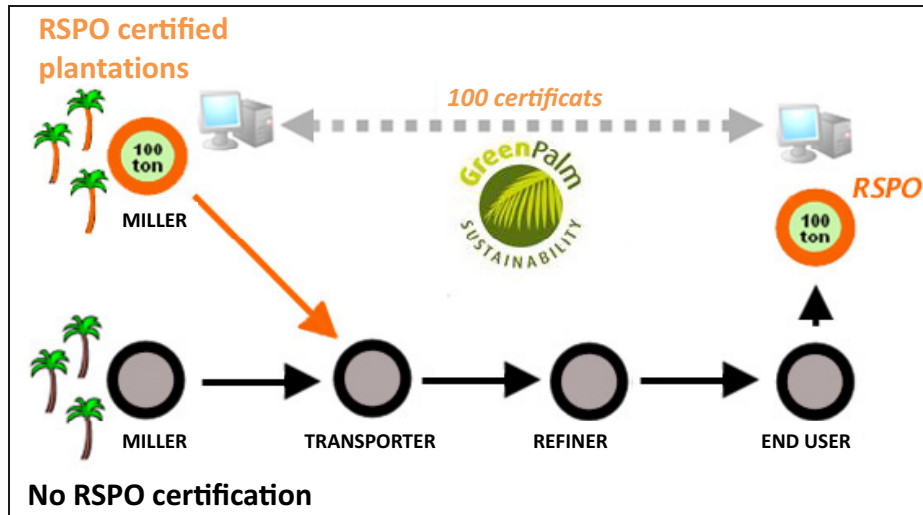


Fig. 1. Strategy 1 (Book and Claim): the GreenPalm™ certificates do not claim that the product contains raw material which has been produced sustainably but that its use supports sustainable production.

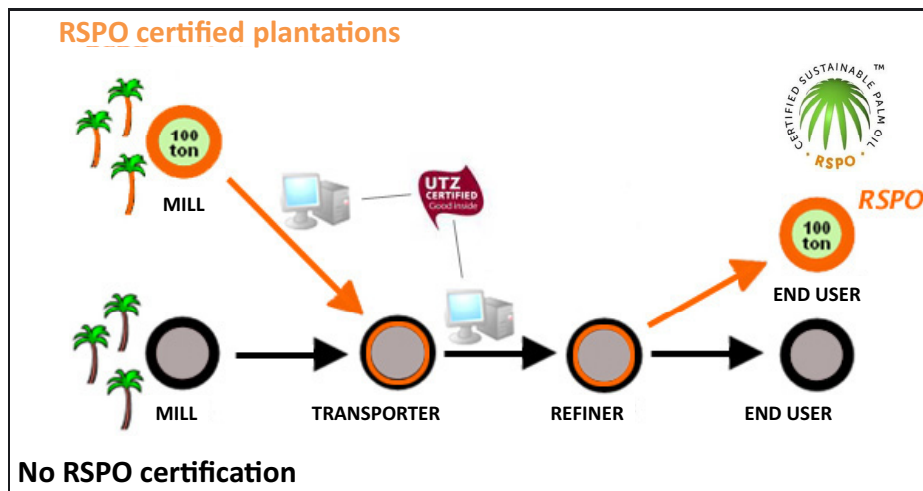


Fig. 2. Strategy 2 (Mass balance): this certification corresponds to the use of a blend of sustainable and non-sustainable palm oil at any stage of the supply chain, providing global quantities at the company level are checked.

Labelling: “Mixed – Contributes to the production of certified sustainable palm oil, www.rspo.info www.rspo.org”.

iii. *Segregated* (Fig. 3): this model, approved by UTZ Certified, ensures that CSPO and its byproducts, delivered to the end user, come uniquely from RSPO certified sources. It authorizes the mixing of CSPO from several sources providing they are all certified. This type of segregated supply chain guarantees that 100% of the physical product comes from certified plantations and industrial facilities. However, the oil itself will not come from a single source. Labelling: “Certified – This product contains certified sustainable palm oil, www.rspo.info”.

iv. *Identity preserved* (Fig. 4): the identity preserved supply model ensures that certified palm oil and its byproducts, delivered to the end user, come from a single, identifiable oil mill and supply base and that they remain physically isolated from other sources of palm oil throughout the supply chain (including other CSPO sources). The IP scheme

is the closest to Geographical Indication labelling. This scheme requires the producer, transporter, refiner and supply chain to maintain complete and total separation as well as traceability from place of production to end user. The latter is guaranteed that 100% of the palm oil physically received comes from a unique, identifiable, certified RSPO source. Labelling: Wording of label “Certified This product contains certified sustainable palm oil, www.rspo.info”.

The indirect effects of RSPO certification have recently been analysed by WWF (WWF, 2012a). This study clearly shows the benefits of RSPO certification for planters, over and above the simple premium on the purchase price of certified oil. In fact, the current premium (US\$ 0.6 per ton of oil) paid to the producer is quite insufficient to cover costs of certification which come to US\$2–40 per hectare, (about US\$ 0.5–10 per ton). However, the indirect benefits are very important in terms of organization of the company or cooperative,

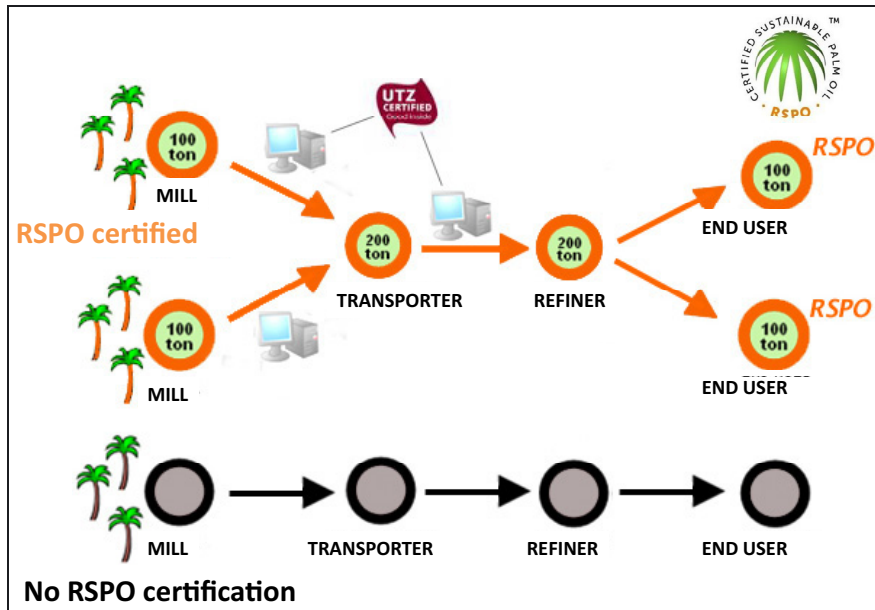


Fig. 3. Strategy 3 (Segregated): this certification ensures that CSPO and its byproducts, delivered to the end user, come uniquely from RSPO certified sources.

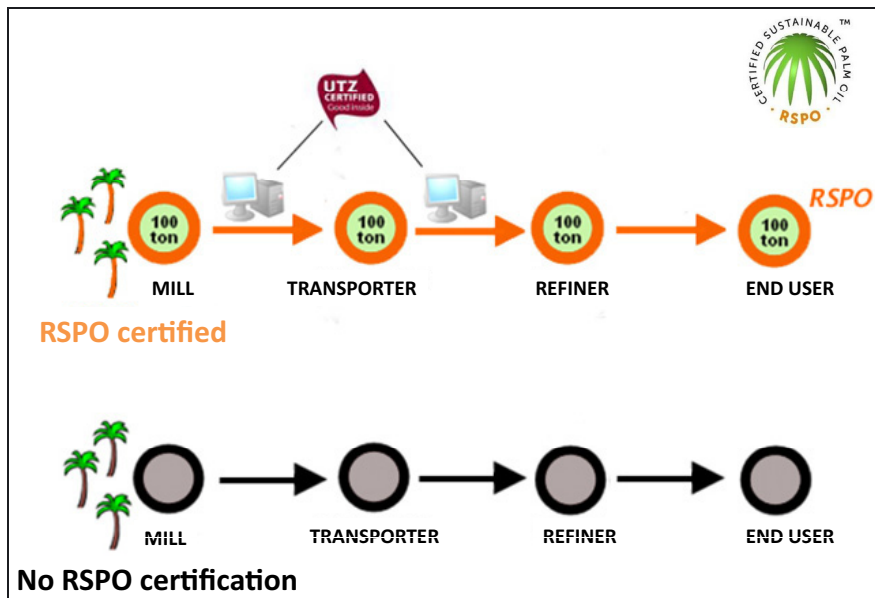


Fig. 4. Strategy 4 (Identity preserved): this certification ensures that certified palm oil and its byproducts, delivered to the end user, come from a single, identifiable oil mill and supply base, and that they remain physically isolated from other sources of palm oil throughout the supply chain (including other CSPO sources).

standardization of procedures, traceability of products and inputs, safety at work and social protection, amongst many other effects. For cooperatives which bring together smallholders, the gains in productivity following certification can be considerable (WWF, 2012a).

Once being RSPO certified the plantation company or cooperative will be much better prepared to undertake certification under any other scheme, either national (ISPO, MSPO) or international (ISO, IFCC, etc.).

With smallholders accounting for 40% of the global palm oil production, the financing of RSPO certification for small-

holders is more crucial than ever; it is the focus of the latest review of the certification Principles and Criteria which took place in 2013. The first experiment, carried out in Thailand (FAO, 2012), produced very high costs of certification (US\$ 28 per hectare) and a premium for planters that was not sufficiently motivating (US\$ 0.0003 per kilogram of harvested fruits). These cooperatives were only certified thanks to the intervention of outside donors.

In spite of its recognized weaknesses, which are shared by a number of private multi-stakeholder initiatives which pre-date it, the RSPO has the great merit of setting out the basis

for constructive dialogue within the industry. It offers imperfect but useful tools for raising the moral standard of the palm oil production chain and for steering it towards greater sustainability.

These certification tools are still basically qualitative and, if they are to gain credibility, must be refined and consolidated on the basis of proven scientific results, which are shared and recognized. Much of the collaborative research underway on the oil palm is designed to identify suitable solid indicators of sustainability.

5.3 Other certification schemes for sustainable palm oil

RSPO NEXT has been developed to recognise the efforts of RSPO members who are exceeding the requirements of the RSPO Principles and Criteria. It is a voluntary commitment put forth in addition to the existing P&Cs and incorporates more stringent assessment standards, with guidelines regarding deforestation, fire, peat, human rights and landscape approaches, among other issues. These are measured through a combination of reviewing company policies and on-the-ground verification. This additional assessment gives member companies the opportunity to go beyond the requirements of the RSPO and demonstrate a stronger commitment to environmental and social responsibility.

ISPO: Indonesian Sustainable Palm Oil. ISPO was introduced by the government of Indonesia in March 2011. ISPO was designed from a legal framework based on Indonesian regulation (27 Laws and Regulations) involving the Ministry of Agriculture, the State Ministry for the Environment, the Ministry of Forestry and the National Land Agency. ISPO is mandatory: it is legally binding to all palm oil plantations within Indonesia and involves fines and sanctions. Indeed, punishment is applied to plantations/mills which cannot prove conformity to the required laws and regulations. ISPO audits have been conducted by independent certification bodies since May 2012, with a deadline involving all Indonesian growers by the end of 2014, and eligible plantations which were uncertified by 2014 can be downgraded (Harsono *et al.*, 2012).

ISPO is part of the wider Sustainable Palm Oil (SPO) Initiative, developed with the support of the United Nations Development Programme (UNDP). The establishment of the SPO Initiative is in line with UNDP's mission to help countries such as Indonesia find ways to ensure that economic growth becomes sustainable and empowers the poor and the marginalized population. The system supports the implementation of many of Indonesia's existing laws and regulations, and the assessment of growers relies heavily on AMDAL – the Indonesian Environmental Feasibility Assessment.

The SPO Initiative aims to increase smallholder capacity and improve livelihoods, better protect the environment and reduce GHG emissions, through the following strategic components:

- Strengthen the capacity of smallholders focusing on good agriculture practices and environment protection.
- Strengthen ISPO standards to protect forests, enhance biodiversity conservation, and mitigate and monitor greenhouse gas (GHG) emissions.

- Facilitate social responsibility, empowering related communities and mediation systems.
- Reinforce the ISPO framework and clarify ISPO standards for wider acceptance.
- Establish national and provincial platforms to ensure transparency in the sector and to promote sustainable palm oil.

The ISPO makes no explicit reference to applying “free, prior and informed consent” (FPIC) standards during a plantation land acquisition process, although there is an explanation regarding land conflict settlement and compensation (Efeca, 2016). The credibility of ISPO has been questioned due to the government being perceived as having vested interests in the palm oil industry; however, in comparison to the RSPO, ISPO has criteria that are more detailed and specific. With this in consideration, further development and regular third-party assessments of the national scheme could help it to be of great benefit to the industry (Ivancic and Koh, 2016).

Malaysian Sustainable Palm Oil (MSPO) is a national certification standard created by the Malaysian government and developed with input from various stakeholders in the palm oil industry. It was first launched in November 2013, and officially came into implementation as of 1st January 2015. The MSPO standard follows seven principles surrounding the themes of “Management”, “Social Equity”, “Environmental Protection” and “Economic Progress”, namely Management and commitment responsibilities, Transparency, Compliance to legal requirements, Social responsibility, health, safety and employment conditions, Environment, natural resources, biodiversity and ecosystems, Best practices and Development of new planting. MSPO aligns the management of palm oil production with many existing national laws and regulations, although unlike ISPO, the MSPO standard is not currently mandatory.

In 2015 the Malaysian and Indonesian governments announced a plan to merge their two national sustainability standards – ISPO and MSPO – to form the “Council of Palm Oil Producing Countries” (CPOPC), with the aim of improving production and coordinating control of the market. The council aims to develop the industry in member countries, “improve smallholders” welfare and build a global sustainable palm oil framework”. The CPOPC is also open to other palm oil producing countries, including the Philippines, Thailand, Colombia, and Brazil, and others. Founding countries Malaysia and Indonesia also proposed e+POP, a global framework of laws and regulations for the industry's sustainable development.

The Palm Oil Innovation Group (POIG) is an initiative between environmental and civil society organizations, and industry companies that aims to build upon the RSPO Principles and Criteria (P&C) and existing company commitments – especially on issues of deforestation, carbon stocks, biodiversity, greenhouse gas (GHG) emissions, pesticide use and social relations. Launched in 2013, the POIG Charter holds that certain P&C should set clearer performance standards for certified growers with the following recommendations: introduce a High Carbon Stock (HCS) approach to land development, Maintain and restore peatlands and prohibit their clearance, Publicly report GHG emissions from all sources, Minimize the use of chemical fertilizers and toxic pesticides, Prohibit cultivation of Genetically Modified Organisms (GMOs), Manage water sources and their use responsibly and transparently

and Protect and conserve wildlife through High Conservation Value (HCV) assessment. POIG members argue that this builds a business case for responsible palm oil by bridging the gap between producers and consumer companies such as Ferrero, Nestlé, Procter and Gamble and Unilever, which have made “No Deforestation” commitments. In 2014 POIG released its first “Charter Indicators” list, which stipulates the specific conditions to be met regarding issues such as peat development, HCV and HCS management and the FPIC process, among others. These indicators have since been trialed and revised. The High Carbon Stock Approach (HCSA) Steering Group is a separate development that governs an established methodology supporting industry stakeholders to implement commitments to end deforestation associated with the production of palm oil and other commodities. Established in 2014, the group was formed to oversee the further development of the methodology and its use in the field.

The Sustainable Palm Oil Manifesto (SPOM) commits its signatories to supply chain sustainability through three main objectives: (i) no deforestation in High Carbon Stock forest areas and the protection of peatlands; (ii) to create traceable and transparent supply chains; and (iii) to provide positive economic and social impacts for people and communities. These standards aim to build upon those set by RSPO, of which all signatories are members. Five of the largest oil palm growers in the industry – together producing more than 9% of the world’s palm oil – were the first to sign the Manifesto, and then other signatories have joined. The Manifesto signatories are funding a study on HCS aiming to establish thresholds and suitable assessment methods to identify HCS forests, which will be excluded from future oil palm plantation development, thereby ensuring that environmental concerns are addressed whilst not stifling economic development.

The Indonesia Palm Oil Pledge (IPOP) was a partnership of palm oil companies with a mission to create an environment in Indonesia which enables and promotes the production of sustainable palm oil that is deforestation free, expands social benefits, and improves Indonesia’s market competitiveness.

Since July 1st 2016, IPOP signatories have decided that recent groundbreaking policy developments in Indonesia have fulfilled the purpose of IPOP to help accelerate and promote this transformation toward sustainability and therefore it can be dissolved.

The Signatories will continue to implement their sustainability commitments independently. To find out more about IPOP signatories sustainability commitments refer to each of IPOP member companies’ official website. All IPOP expired at the end of September 2016.

6 Surviving in the labels jungle

A number of standards exists to support responsible palm oil production: certification standards, such as the Roundtable on Sustainable Palm Oil (RSPO), establish common commitments and guidance for growers and lend credibility to their claims on the sustainability of their operations; therefore providing assurances to buyers and investors. In addition to certification schemes, voluntary initiatives, such as the Palm Oil

Innovation Group (POIG) and the Sustainable Palm Oil Manifesto (SPOM), have been established and endorsed by a number of growers, committing them to criteria for sustainable production. Mandatory national standards, such as the Indonesian Sustainable Palm Oil system (ISPO), which is applicable to all oil palm growers in Indonesia, have also been developed to address industry sustainability at a national level.

Van Duij (2013) showed that procedures in the globalized and complex palm oil supply chain guarantee stepwise traceability as required by food safety regulations, although continuous traceability is usually not achievable. To the author, the RSPO trace and traceability systems do not improve this. Exception is the Identity Preserved system, however, the high costs and low volume of this system makes it only applicable for niche market products.

Moreno-Peñaranda *et al.* (2015) worked on the perceptions on the barriers for improving palm oil sustainability as held by the main RSPO stakeholder groups and they contrasted them with the views of local communities in oil palm expansion areas. These authors suggested that RSPO stakeholders’ perceptions about enhancing palm oil sustainability are overall highly divergent. However there seemed to be an underlying common optimism among some RSPO stakeholders and local communities about the feasibility of a technical fix.

The present article was not aimed at describing into details all sustainability standards which are presently applying to palm oil. The SPOTT initiative recently listed them as follows:

- Roundtable on Sustainable Palm Oil (RSPO).
- International Sustainability and Carbon Certification (ISCC).
- Rainforest Alliance (RA)/Sustainable Agriculture Network (SAN).
- Roundtable on Sustainable Biomaterials (RSB).
- Palm Oil Innovation Group (POIG).
- Sustainable Palm Oil Manifesto (SPOM).
- Indonesian Sustainable Palm Oil (ISPO).
- Malaysian Sustainable Palm Oil (MSPO).

Furthermore, there are several other labels and logos concerning palm oil such as *Fairtrade palm oil*, *No palm oil*, *GMO free* and *Red palm oil*.

Fairtrade palm oil: in Ghana, the company Clean and Fair (<http://www.cleanandfair.com/>) manufactures different products, mainly cleaning products, with Fair Palm produced by smallholder farmer communities. On Fair trade net, we do not find palm oil originated from SE Asia (<http://www.fairtrade.net/standards/price-and-premium-info.html>).

No palm oil (palm oil free): many internet sites are asking to avoid palm oil in different products and created their logo.

GMO free: Oil palm is considered as entirely GMO-free but some associations are insisting on this fact to promote their oils.

Red palm oil: this logo is essentially used to promote the health benefit of red palm oil. This colour is mainly due to the presence of high level of carotenoids (alpha-, beta-, and gamma-carotenes).

Thus, as a total, there are to date no less than 8 different standards applying to palm oil only (and RSPO has four different levers of certification) which means at least 15 possible labels on palm oil containing products.

A way of avoiding adding standards to standards, labels to labels and confusion to confusion among buyers, investors and consumers has been proposed by some non-profit organizations such as TFT (The Forests Trust) through a direct action with known brand products in agro food or cosmetics. An accurate mapping of supply chains is the starting point and the driver of continuous transformation of the chain towards sustainability: traceability first, and then come responsibility/certification. At the end of the process, the brand (Nestlé, Danone, Colgate) has defined its sustainable practices following its own values and policies and it endorses sustainability such as it does for nutritional or contamination control. Consumers trust is then linked to the brand reputation and not to an independent (and often tricky-to-understand) standard and its corresponding label. All brands that are signed on with The Forests Trust have a palm oil sourcing policy which clearly states what they are doing about their supply chain and usage: these policies are a set of standards that show how they are engaging with suppliers and traceability progress. Policies with The Forest Trust are complementary to RSPO and help companies to go above and beyond RSPO certification standards. The change process is fuelled by the company's inner values, not by external rules or standards (either voluntary or mandatory) and it must be backed by very strict and steady internal controls.

Only time will tell if such partnership have led to better sustainability performance on the long term than national or multi-stakeholders standards and which scheme has really transformed the oil palm supply chain into a deforestation and exploitation-free sector.

7 Conclusion

Consumers and producers in developed countries and especially in Europe are becoming familiar with standards which define quality and/or geographical origin of food products: such consumers are willing to pay the highest premium price for a product with a PDO label or originating from organic farming.

With the global emergence of middle-class consumers in developing countries, voluntary or legal systems aimed at protecting, certifying and branding food products are rapidly gaining ground. The success of any certification scheme will depend also widely on the ability of stakeholders to gain a premium price to offset the incurred costs. Certifying and labelling products from a global and fragmented supply chain, like for palm oil, follow a long and winding road.

Most of existing sustainability standards proved inefficient at rebalancing the distribution of value within the supply chain, most probably because of their insufficient inclusiveness towards important categories of stakeholders like forest people or independent smallholders. Changes are needed, which would include a better representation of governments and producer organizations. With smallholders accounting for 40% of the global palm oil production, the financing of certification schemes for smallholders is more crucial than ever. In order to get public credibility, certification schemes must be based on robust, assessed and shared scientific evidence.

More, the coexistence of almost 15 different standards and labels for palm oil proved confusing not only for consumers, but also for buyers, traders and investors. The harmonization of standards is a long standing request from the palm oil industry, although if this is finally done, which is advisable, attention must be paid not to align on the weakest one, at the risk of jeopardizing recent efforts made by companies and NGOs to go beyond existing standards.

There are still a lot of knowledge gaps and challenges for researchers in multidisciplinary fields embracing agronomy, forestry, breeding, ecology or social and human sciences. Both the public and the oil palm sector are waiting for immediate, applicable and credible results, and this creates unique opportunities for collaborative research initiatives.

References

- Agricultural products and foodstuffs – PDO and PGI - Reg. (EC) No. 510/2006, Oils and fats, http://ec.europa.eu/agriculture/quality/schemes/index_en.htm
- Aprile MC, Caputo V, Nayga Jr, RM. 2012. Consumers' valuation of food quality labels: the case of the European geographic indication and organic farming labels. *Int J Consumer Studies* 36: 158–165.
- Arete. 2013. Study on assessing the added value of PDO/PGI products, Executive Summary, Commissioned Study by the European Commission, December. http://ec.europa.eu/agriculture/external-studies/addedvalue-pdo-pgi_en.htm
- Barham E. 2003. Translating terroir: the global challenge of French AOC labeling. *J. Rur. Stud.* 19: 127–138.
- Belletti G, Brazzini A, Marescotti A. 2014. Collective rules and the use of protected geographical indications by firms. Prologue. The role of localised agrifood systems in a globalised Europe 7, 11.
- Bessou C, Chase L, Henson I, *et al.* 2012. PalmGHG, the RSPO greenhouse gas calculator for oil palm products. In 8th International Conference on LCA in the Agri-Food Sector, pp. 498-504. <http://hal.cirad.fr/cirad-00771650/>.
- Biénabe E, Marie-Vivien D. 2015. Institutionalizing geographical indications in southern countries: lessons learned from Basmati and Rooibos. *World Development*. In press: <http://dx.doi.org/10.1016/j.worlddev.2015.04.004>.
- Brandi C, Cabani T, Hosang C, Schirmbeck S, Westermann L, Wiese H. 2015. Sustainability Standards for Palm Oil Challenges for Smallholder Certification Under the RSPO. *J. Environment & Development* 24: 292–314.
- Brunelle T, Dumas P, Souty F. 2014. The impact of globalization on food and agriculture: The case of the diet convergence. *J. Environment & Development* 23: 41–65.
- Crowder DW, Reganold JP. 2015. Financial competitiveness of organic agriculture on a global scale. *Proc.Natl. Acad. Sci.* 112: 7611–7616.
- Daviron B, Vagneron I. 2011. From Commoditisation to De-commoditisation... and Back Again: Discussing the Role of Sustainability Standards for Agricultural Products. *Development Policy Review* 29: 91–113.
- van Duijn G. 2013. Traceability of the palm oil supply chain. *Lipid Technology* 25: 15–18.
- Durand C, Fournier S. 2015. Can Geographical Indications Modernize Indonesian and Vietnamese Agriculture? Analyzing the Role of National and Local Governments and Producers' Strategies. *World Development*. <http://dx.doi.org/10.1016/j.worlddev.2015.11.022>.

- Efeca UK. 2016. Comparison of the ISPO, MSPO and RSPO Standards. http://www.sustainablepalmoil.org/wp-content/uploads/sites/2/2015/09/Efeca_PO-Standards-Comparison.pdf.
- Gereffi G, Lee J. 2012. Why the world suddenly cares about global supply chains. *Journal of Supply Chain Management* 48: 24–32.
- Harsono D, Chozin, MA, Fauzi AM. 2012. Analysis on Indonesian Sustainable Palm Oil (ISPO): A Qualitative Assessment the Success Factors for ISPO. *Jurnal Manajemen & Agribisnis* 9: 39–48.
- Inglis D, Gimlin D. 2015. The globalization of food. Nova York.
- Ivancic H, Koh LP. 2016. Evolution of sustainable palm oil policy in Southeast Asia. *Cogent Environmental Science* 2: 1195032.
- Lacoste F. 2014. Undesirable substances in vegetable oils: anything to declare? *OCL* 21: A103.
- Laurence W-F, *et al.* 2010. Improving the performance of the Roundtable on Sustainable Palm Oil for Nature Conservation. *Conservation Biology* 24: 1523–1739.
- Lee J, Gereffi G, Beauvais J. 2012. Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries. *Proc. Natl. Acad. Sci. USA* 109: 12326–12331
- Linnemer L, Perrot A. 2000. Une analyse économique des signes de qualité : labels et certification des produits. *Revue Economique* 51: 1397–1418.
- Moreno-Peñaranda R, *et al.* 2015. Sustainable production and consumption of palm oil in Indonesia: What can stakeholder perceptions offer to the debate? *Sustainable Production and Consumption* 4: 16–35.
- Rival A, Levang P. 2014. Palms of controversies: Oil palm and development challenges. Bogor, Indonesia: CIFOR.
- Ruyschaert D, Salles D. 2014. Towards global voluntary standards: Questioning the effectiveness in attaining conservation goals: The case of the Roundtable on Sustainable Palm Oil (RSPO). *Ecological Economics* 107: 438–446.
- Ruyschaert D, Salles D. 2016. The strategies and effectiveness of conservation ngos in the global voluntary standards: The case of the roundtable on sustainable palm-oil. *Conservation and Society* 14: 73.
- Sustainable Palm Oil Transparency Toolkit (SPOTT). 2016. Standards and Certification, ZSL.
- Sylvander B, Lagrange L, Monticelli C. 2007. Official Quality Signs in France and Europe. Which Place in a Globalized Economy, *Économie rurale* 299: 7–23.
- Vijay V, Pimm SL, Jenkins CN, Smith SJ. 2016. The Impacts of Oil Palm on Recent Deforestation and Biodiversity Loss. *PLoS One* 11: e0159668.
- Zhao X, Finlay D, Kneafsey M. 2014. The effectiveness of contemporary Geographical Indications (GIs) schemes in enhancing the quality of Chinese agrifoods – Experiences from the field. *J. Rur. Stud.* 36: 77–86.

Useful links

DOOR database

<http://ec.europa.eu/agriculture/quality/door/list.html>

Sustainable palm oil initiative

<http://www.id.undp.org/content/indonesia/en/home/ourwork/environmentandenergy/sustainable-palm-oil-initiative--spo-.html>

High Carbon Stock (HCS), highcarbonstock.org/

HCS+ methodology

[http://rt13.rspo.org/ckfinder/userfiles/files/Prep%202_1_1%20Dr%20John%20Raison\(1\).pdf](http://rt13.rspo.org/ckfinder/userfiles/files/Prep%202_1_1%20Dr%20John%20Raison(1).pdf)

ISPO Standard, International Standard for Maritime Pilot Organizations www.ispo-standard.com/

The ISPO () is a standard of best practice for pilots and pilot organizations, improving safety and quality.

MSPO Standard

<http://www.mpoc.org.my/upload/IPOSC-2014-Malaysian-Sustainable-Palm-Oil-Current-Status-Dr-Ainie-Kuntom.pdf>

SPOTT Sustainable Palm Oil Transparency Tool kit
<http://www.sustainablepalmoil.org/standards/#ispo>

Official regulations

EU Regulation No. 1151-2012 of 21 November 2012 of Parliament on quality systems for agricultural products and foodstuffs.

EU Regulation No. 510/2006 of 20 March 2006 laying down the rules on the protection of designations of origin and geographical indications (PDO and PGI).

EU Regulation No. 509/2006 on traditional specialties guaranteed (TSG).

Free Trade Agreement between the European Union and its Member States, of the one part, and the Republic of Korea, of the other part, Official Journal of the European Union 14.5.2011.

EU Regulation No. 834/2007 on organic foods.

EU Regulation No. 889/2008 laying down detailed rules for the implementation of Council Regulation (EC) No 834/2007 on organic production and labelling of organic products with regard to organic production, labelling and control.

EU regulation 1829/2003 on genetically modified food and feed.

Economic analysis of the olive sector, European Commission, Directorate-General for Agriculture and Rural Development (2012).

New EU Food Labeling Rules Published. USDA Foreign Agricultural Service. 12 January 2012. Retrieved 29 January 2013.

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