



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



UNIVERSITY OF PADOVA

**DIPARTIMENTO LAND, ENVIRONMENT,  
AGRICOLTURA E FORESTRA  
(TESAF)**



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

AGRIPOLIS – Viale dell'Università, 16 – 35020 LEGNARO  
(Padova)  
Tel. +390498272685 - Fax 0498272686 – P.IVA 00742430283

## **6th AIEAA Conference, Piacenza, 15-16 June 2017**

**“Economics and Politics of Migration: Implications for Agriculture and Food”**

**“Embedded” deforestation and forest degradation: exploring responsibilities and potentialities in green marketing of the Italian leather industry**

Aynur Mammadova, Caroline Sartorato Silva França, Mauro Masiero, Davide Pettenella  
TESAF Department, University of Padua, Italy

## **Background and problem definition**

Tackling global deforestation and forest degradation has been on the agenda of the international forest community for years in the context of climate change mitigation. Different governmental policies, international regulations and third-party initiatives are directed towards conserving the world's remaining forests and tackling their illegal and unsustainable exploitation. Acknowledging the role of private sector and investors in achieving a deforestation free economy, diverse stakeholders are joining forces by adhering to global platforms such as the New York Declaration on Forests 2014, by declaring individual sustainability commitments and time bound zero deforestation targets.

Recent decades saw a global shift from subsistence to export-driven commodity agriculture as one of the important drivers of tropical deforestation (Rudel et al. 2009; Defries et al. 2010). Being home to most intact natural forests tropical countries face the pressure most, as environmental sustainability and forest conservation are usually in conflict with national development strategies and promises of governments to push for economic growth and create more job places. As the second largest soy and cattle producer Brazil made it to international headlines when increasing evidence and satellite imagery were provided showing that the agricultural expansion in the country is happening at the expense of one of the most biodiverse biome – Amazonian forests (Walker et al. 2000; Mertens et al. 2002; Bowman et al. 2012; Moutinho et al. 2016; FAOSTAT 2017).

As the result of cattle ranching activities in Brazil different commodities are being produced, beef being the major commodity followed by leather and tallow (Walker et al. 2013). Processing indirect but very valuable product of cattle ranching and being the number second importer of Brazilian bovine hides and skin, Italian leather industry is unwillingly linked to the processes happening upstream (UNIC, personal communication, 2016). Incomplete traceability, complexity of the upstream tier of the supply chain, and lack of negotiation power are among many challenges on the way to address the issue of deforestation within leather industry (Gibbs et al. 2016; Walker et al. 2013). Bearing in mind the growing trend among businesses to put forward zero deforestation commitments and increasing transparency and concern among consumers and civil society, this paper aims to explore the readiness and potential within the Italian leather sector to commit to deforestation-free supply chains.

### ***Research aim and questions***

Building on the above-mentioned concerns the following research questions are addressed:

1. Does the issue of deforestation present a business risk for Italian leather industry? (RQ1)
2. What is the level of awareness about upstream processes among Italian tanneries? Is it being publicly communicated? (RQ 2)
3. What are the potential marketing opportunities for the industry in investing in full traceability and deforestation free supply chains? Are zero deforestation commitments suitable tool? (RQ 3)

## ***Methodology***

The following methods were used in order to address each research question. RQ 1 was analysed mainly through literature review of academic publications, NGO reports and other available grey literature. The content analysis method and experts' interviews were used to investigate the level of awareness of Italian leather industry regarding the link between cattle industry and deforestation (RQ 2).

For the content analysis, 169 companies associated to the Italian Tanner's Association (UNIC) were considered and all tanneries that (i) had explicit mention on the use of bovine leather within UNIC database and (ii) had functioning websites were analysed. UNIC is the largest national association of tanneries in the world (UNIC 2016), therefore, choosing its associates as the target population is understood as representative for this content analysis. Besides, no comprehensive database on all Italian tanneries that use bovine skins and hides has been found. Using the websites as a point of departure, additional available information was analysed, including: code of ethics, environmental declarations, sustainability reports, company policies, corporate communication documents, certificates of compliance with a given standards.

A semi-automated method (python script) was applied to systematically search for the mention of keywords within websites, subsequently followed by a qualitative evaluation of its contextual use and provision of supporting documents. Values were assigned to the use of each keyword. Keywords received a value of: 0 – if there was no mention, 1 – if there was a brief mention and 2 – if they were mentioned and additional information was provided.

Informal interviews and observations were used to further explore the RQ2, as well as for providing preliminary analysis for RQ3. RQ3 is addressed in the discussion section and further recommendations are provided. As this paper is part of an ongoing research more structured and systematic interviews and surveys are planned to be conducted in the future.

## **Deforestation as a business risk**

### ***Inclusion of private actors into forest governance schemes***

Deforestation and forest degradation are among the major contributors to greenhouse gasses emissions and climate change (IPCC 2014). Despite ongoing negotiations and international agreements, the success around conserving remaining world's forests and reducing deforestation rates remains minimal. The idea of having an international legally binding agreement on forests has not found its realization mainly due to the differences of visions of developed and developing countries (Humphreys 1996; Arts 2002).

Lack of resources and will, as well as increasing politics around the issue urged non-state actors to enter the forest governance arena since the 1990's. As explained by neo-institutionalism [and the "Transnational legal pluralism" (Zumbansen, 2010)], gradually non-traditional actors started entering the political space and getting involved in decision-making processes around the issues previously considered as state exclusive (Arts and Buizer 2009).

Thus, the failure of national governments to effectively manage their forests, as well as to reach an internationally binding agreement led non-state actors such as non-governmental organisations (NGOs), businesses, etc. to engage in new forms of governance over the world's forests. As pointed out by Visseren-Hamakers and Glasbergen (2007) these new governance schemes had different forms such as purely business, purely civil society, private intersectoral (civil society – business partnerships), and public-private arrangements. The 1990s and 2000s saw mainly the surge of civil society-business partnerships in the form of several forest certification schemes aiming to acknowledge and to create new markets for the products deriving from sustainably managed forests. Although being largely welcomed in the beginning, these certification schemes have also been criticized among others for not reaching the initial promise of conserving tropical forests and for being implemented mainly in the Northern countries (FSC Watch 2009).

As claimed by Humphreys (2008) and McDermott (2010), the efforts of governing world's forests also led to oversimplification of the issue and concentration on only one aspect of forest governance during each phase of global negotiations. Reducing Emissions from Deforestation and Degradation (REDD+) initiatives concentrated on “carbon” units as a proxy to good forest governance, while recent global efforts have been directed towards “legality” aspects. This has found its manifestation on recent pieces of legislation such as the US Lacey Act, the EU FLEGT Action Plan, The Australian Illegal Logging Prohibition Act 2012, etc. These recent legislations were another effort to bring back the state authority over forests and establish national states as major players within the forest governance schemes (McDermott 2011; Van Heeswijk and Turnhout, 2013).

Despite being a voluntary agreement The New York Declaration on Forests (NYDF) of 2014 managed to bring together governments, businesses, and civil society organizations to endorse globally agreed timelines on cutting a natural forest loss. The parties to the Declaration agreed to at least halve the rate of the natural forest loss by 2020 and end it till 2030. With reference to degraded lands the Declaration urges the parties to restore 150 million (mln.) hectares (ha) by 2020 and at least an additional 300 mln. ha by 2030 (NYDF 2014). The significance of the Declaration is also acknowledged in terms of spurring private sector involvement and urging businesses to take over responsibilities related to forest loss as the result of their operations. It was confirmed one more time that addressing deforestation at a global scale and at all levels cannot be achieved without private sector and business involvement, responsibility, and commitments. Thus, the NYDF has become an important push for public and private sector commitments on putting forward policies and strategies to address deforestation and forest degradation (NYDF, 2014). Paris Climate Agreement in 2015 became another momentum for growing number of corporate strategies addressing forests.

### ***Deforestation, global agricultural supply chains and cattle***

Recent studies that assess agricultural commodities with high impacts, single out livestock as the largest driver of tropical deforestation (Achard et al. 2002; Gibbs et al. 2010; Hansen et al. 2013, Henders et al. 2015; Hensen et al. 2015). The situation is especially dare in Brazil as one of the biggest cattle producing country, which also controls more than 60% of the Amazon region. The impact of livestock on the deforestation in Brazil has received the attention from the international community starting in 2009 when Greenpeace published a report “Slaughtering Amazon” showing direct linkages between unsustainable practices of land acquisition, cattle ranching and increasing rate of deforestation (Greenpeace International 2009). Since then Brazilian government has put forward different regulations, in particular in the states of Pará and Mato Grosso where the situation is specially alarming (NWF 2015).

In 2009, through the pressure of the Federal Public Prosecutor's Office in Pará state and NGOs Brazil's largest meatpacking companies, Marfrig, Minerva, JBS, and Bertin signed the "G4" zero-deforestation agreement with Greenpeace (Greenpeace International 2009). This agreement includes only those properties selling directly to slaughterhouses ("supplying properties"), and excludes all other indirect suppliers such as calving and breeding ranches (Walker et al. 2013; Gibbs et al. 2016). Under the G4 agreement, JBS, Marfrig, and Minerva committed to set up monitoring systems to manage deforestation risk in their individual supply chains, which basically comprises of getting their supplies only from properties that register under the federal government and submit the geographic positioning system (GPS) indicators and geographic information system (GIS) data of their borders (Gibbs et al. 2016).

Despite Brazil's unprecedented achievements in halting Amazon's deforestation (Boucher et al. 2013), the country still loses more forests than any other worldwide (FAO 2015). According to the National Institute of Space Research (INPE) the annual deforestation rate for 2016 was around 7989 km<sup>2</sup> (2016). This is concerning because Brazil hosts the largest tropical forest in the world, it is the most biodiverse country featuring approximately 70% of all catalogued animal and plant species (CBD 2017), and holds still 12% of the whole world's forests (FAO 2015). If instead of tilting the cattle production towards forest frontier, Brazil invests in intensifying the cattle production (which is currently 1-1.6 head per ha (Strassburg et al., 2014)), significant improvements in terms of deforestation rate can be achieved.

Although beef is the most profitable product of the cattle industry (Walker et al. 2013), other products are implicated in driving deforestation, land use changes and associated greenhouse gas emissions. In fact, Carbon Disclosure Project (CDP), a major global reporting initiative, indicates that among companies that report to them 41% recognize operational, 47% reputational and 37% regulatory risks related to cattle production and deforestation. Thus, for companies dealing with cattle-related commodities and that are under tighter regulations and increasing public scrutiny there is a potential future risk to brand reputation, availability and pricing of commodities, their costs and quality (CDP 2016). This is especially the case of leather as the second most profitable product of the cattle industry (Walker et al. 2013). Differently from the beef produced in Brazil, which is mostly consumed domestically, the leather is mostly exported (ibid).

Walker et al. (2013) estimate that 26% of the animal skin and hides produced within Brazil is processed domestically while 74% of it are exported to international markets (see for example Figure 1). China is the biggest importer of animal hides from Brazil. The second biggest importer is Italy (UNCTAD 2017) importing up to 20% of the annually exported animal skins (UNIC, 2015). Although China and Hong Kong are significant importers of finished and semi-finished Italian leather products, 49% of the Italian exports stays within the European Union (Walker et al. 2013).

Considering the increased sensitiveness of the Italian and European market towards environmental issues, the intertwined link between deforestation and leather presents a sizeable risk to tanneries and large brands working with this commodity (FERN 2015; Lawson 2014).

CDP reports that 53% of manufacturers and retailers are able to trace over 90% of the cattle products they source or produce, while only 20% have traceability back to the farm (2016). This remains especially challenging for the leather sector. It is a largely shared idea that the formal supply chain of leather starts from the slaughterhouse. However, there is growing attention towards the processes happening upstream before the slaughterhouses. Initial observation and analysis of the informal discussions with UNIC representatives suggest that the Italian leather sector is not ready to respond to related risks and a thorough market research is needed to propose solutions for the sector to address growing environmental concerns.

Figure 1. List of importing markets for a product exported by Brazil. Product: 41 Raw hides and skins (other than furskins) and leather



Source: ITC, 2017; UN COMTRADE 2016

The supply chain of leather is relatively complex compared to that of beef. The upstream of the supply chain is dominated by multiple individual actors, such as small farmers supplying either directly to slaughterhouse, or indirectly through the middle-men (Figure 3). Investing in full traceability of the supply chain faces diverse challenges in terms of high transaction costs, high level of informality, business competitiveness, lack of enforcement tools and laws in producing countries (NWF 2015).

Besides, while being transformed into highly valued (and even luxury) commodity through different treatment processes and manufacturing, animal skin and hides are not considered as valuable in the beginning of the supply chain, which makes it more challenging to enforce traceability and documentation. For example, at a farmer gate a bovine skin is worth only 3-7 % of the total value of the animal that they get in return (UNIC, Personal Communication, 2016).

However, considering the size and volume of the leather industry and its direct link to the largest deforestation risk sector, there is a growing pressure on the industry to come forward with commitments and ensure their customers that their products are not contributing to deforestation while being produced (UNIC, Personal Communication, 2016; Walker et al. 2013).

## Awareness among Italian tanneries

### Content analysis

Italian tanning industry is one the oldest and traditional industrial sectors in the country with small and medium size companies creating scattered tanning districts that are flexible enough to create synergies and respond to changing global demands. “Made in Italy” origin mark has become an equivalence of quality and trust for consumers, especially now when leather products from India and China became largely available in the market (UNIC 2016).

Currently the industry is comprised of around 1.200 tanneries employing 18.000 employees and is concentrated mainly in four industrial districts in Lombardy, Tuscany, Campania, and Veneto (UNIC, 2016). Veneto region has the largest concentration of small tanneries making up to 53% of the whole Italian tanning industry (UNIC 2015).

UNIC is the national trade association that since 1946 represents and protects the Italian tanning sector and publishes annual sustainability reports. Although during the personal communication it was indicated that the association covers around 60% of Italian tanneries, the official website has 169 records of member tanneries. Starting the analysis with member tanneries of the UNIC is considered the most appropriate for the purpose of the research.

The contents of publicly available and online material of 78 tanneries with a website in place and explicitly mentioning the use of bovine leather were analysed. This corresponds to roughly 50% of total UNIC member tanneries. A preliminary pilot analysis with a limited number of tanneries was carried out to identify keywords that could be applied in a systematic content analysis. Ten keywords were chosen for the analysis: “forest”, “carbon”, “emission”, “origin”, “source”, “provenance”, “traceability”, “supply chain”, “sustainability”, “environment”. Four of these were chosen ex-post as most representative of the level of awareness and public communication on the issues this research seeks to investigate: “forest”, “origin”, “traceability” and “environment”. For the purpose of this analysis, “origin” was defined as the geographical area skins and hides came from, while “traceability” refers to the ability to track a skin or hide to upstream the supply chain by means of recorded identification. Within the contextual interpretation of the websites, the keywords “forest” and “environment” had limited ambiguity when compared to “origin” and “traceability”.

“Vegetable tanning”, a term that refers to the use of natural tannins and other plant based extracts, was also considered during the analysis. However, the term was not systematically searched because: (i) tanneries use multiple tanning processes depending on the need of the client (wet-blue: chromium-based; wet-white: chromium-free but often using other metals such as aluminium or zirconium; metal-free: using other minerals or plant based tannins) making it difficult to understand the share of vegetable tanning processed by the tannery, (ii) it was traditionally passed down by previous generations (iii) and often considered as superior quality, thus, not immediately relating to the environmental sphere<sup>1</sup>.

Figure 2 show the overall rating for each keyword while Figure 3 shows the number of companies scoring at each category. Overall, tanneries scored lower than 50% of their potential in all keywords, which demonstrates a lack of consistent public communication across all issues investigated. Public communication was found the least developed regarding the role of forests, both in terms of forest loss and degradation connected to the cattle industry and in terms of the potential of forests for carbon emissions abatement. Only four tanneries scored on the keyword “forest”, two of which have explicitly mentioned they do not source “skins from farms in deforested areas such as the Amazon”. The other two invest in forests and green areas within their region of activity as a mean to compensate for carbon emissions and show their concern for the environment. Highest levels of public communication on the role of forests can be exemplified by the quote "Reforestation it does not only

---

<sup>1</sup> Although vegetable tanning is preferable over chromium and other heavy metal-based tanning methods in terms of environmental impact, the analysis did not instantaneously regard it as relevant for the purpose of this paper. This is because the use of natural tannins could be mostly related to human health issues such as skin exposure to leather tanned with heavy metals or to the tradition of a given family business.



mean planting trees. It is necessary to ensure that those trees remain and locally generate a new forest ecosystem" (Gruppo Dani, 2017).

Figure 2. Overall scoring of keywords

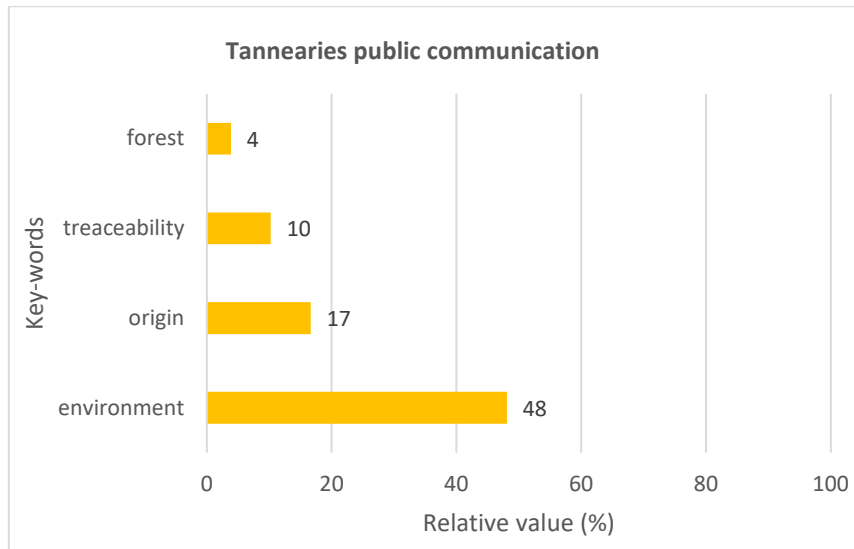
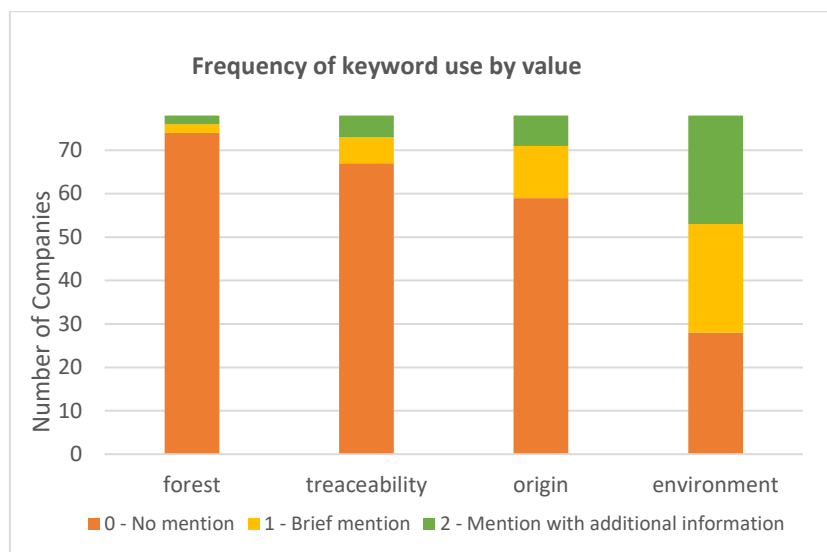


Figure 3. Number of companies scoring at each category



The mention of “origin” of skins and hides as well as “traceability” were more frequent than of “forest”, but still considerably lower than “environment”. In overall, although tanneries seem to source from multiple suppliers across the globe, they are more willing to mention about the origin when skins and hides could be traced back to European suppliers. Communication about origin was presented in terms of the whole production such as in "The raw materials used are only groupings made from cow hides coming from the best French slaughter-houses (Brittany)" (Marcatoro 2017) or it could be specified by product. Some products had technical specification and outlined the country of origin or the region, for example, "Bovine of Extra-European origin" and "Bovine of European origin". Others emphasized the sourcing “from various origins, but mainly from Italy, Europe and

North America". Only one company analysed presented Leather traceability certification (TS SC 410 type) of the Institute of Quality Certification for the Leather Sector ICEC for bovine hides. Other five companies presented the Leather Working Group<sup>2</sup> (LWG) certification, two of which did not advertise the achievement on their own website (LWG 2017). Two of the LWG certification were Gold Rated.

The keyword "environment" was the most used and it can be considered as a proxy to demonstrate tanneries basic level of awareness and public communication towards environmental issues. A total of 50 tanneries have mentioned the word, with 25 providing additional information and other 25 briefly mentioning the word. Just over one third of the companies (28) did not have any mention of environment or mentioned it out of context (e.g. work environment). Websites that briefly mentioned environment often communicate in terms of "the full respect for environmental regulations", the attention to carrying out activities with the "minimum environmental impact" and with "total respect for the men and the environment" or used the word in general terms such as in: "We work complying with the planet and the global environment". For cases such as the latter, translation was also found to be an issue preventing effective communication. Companies that scored the maximum value often pursued certification against a relevant standard such as: ISO 14001 (18), LWG (5) and the European Commission Eco-Management and Audit Scheme (EMAS) (2) or presented a specific environmental policy (5), environmental declaration (2), sustainability reports (2).

Although no systematic data was collected on the size of businesses, it seems larger tanneries (i.e. with well-developed websites, mentioning well-known brands, featuring prominently in some way earnings and relative company size) are more environmentally aware, which could be related to their need to satisfy their clients' growing awareness.

## Discussion

### *Making sense of the position*

Although deforestation was revealed as an important concern during personal communication and interviews (2016-2017), there is a significant lack of consistent public communication of the issue. During informal interviews and discussions with UNIC representatives, interest on the issue was evident. Nonetheless, the content analysis shows, only two companies have mentioned concerns towards their connection to deforestation. Although limited, this is still to be considered an unexpected outcome. For one, the cattle industry is the least committed to deforestation-free supply chains (Donofrio et al. 2017) when compared to other commodities that are closely linked to deforestation. Further, the leather industry profits from its own discourse. The Italian tanning industry (UNIC 2017) perceives itself as the "the precursor of the circular economy" (p.24) for making use of a by-product of the meat industry and understands its "raw material [as] inelastic and strictly related to meat market dynamics" (p.26). Thus, it appears the tanning industry is aware of the upstream processes within its supply chain but might choose not to bring this issue forward, perhaps hesitant on attracting unwanted negative attention. Communicating contentious issues, such as deforestation, appears to be more closely related to lack of transparency than with awareness per se.

---

<sup>2</sup> Leather Working Group is a multi-stakeholder initiative with an objective to develop and maintain a protocol that assesses the environmental compliance and performance capabilities of leather manufacturers and promotes sustainability within the sector (LWG, 2017).

Such precautionary position is understandable given the attention received by companies operating within forest-risky commodities (Donofrio et al. 2017; GCP 2016). Businesses might find it difficult to communicate negative aspects of their supply chain, fearing reprisal for their “not enough” evolution towards established goals. Even if companies are actively procuring a considerable share of its raw materials from known deforestation-free sources, companies might refrain from communicating if they are unsure of the remaining share. Another aspect to be considered is that tanneries might have well-established clients and, thus, not have the need to publicly communicate their positions or views. Nonetheless, the sector appears to be a competitive one and taking full responsibility through transparent communication on supply chain challenges has potential to prevent jeopardizing Italian leather industry as well as placing tanneries in the forefront of their supply chain tier.

The Italian tanning industry will be the first to emphasize the commitment and importance of transparency and reiterate the challenge consumers face with unclear or even misleading information within the sector (UNIC 2016). An example of miscommunication drawn from the research can be found on the following quote: “Even tanneries’ customers will have the opportunity to communicate to the market, under the control of ICEC, they used certified “Italian” skins, through a specific traceability scheme that will issue numbered labels to be placed on leather items.” [Own translation] This quote made reference to the ICEC UNI EN 16484:2015 that certifies products of Italian origin (i.e. at the minimum pass through retanning, fatliquoring and dyeing processes within Italy), but might not in fact guarantee any traceability of the raw material. Such example shows how lack of consistent communication might potentially mislead clients and consumers which are not familiar with true meaning of a given certification.

### ***Leverage points for Italian leather industry to utilize zero deforestation commitments***

The growing criticism businesses have been facing due to their involvement in the production and procurement of deforestation risk commodities – cattle, palm oil, soy and timber – has spurred change in position for multiple actors along such commodities supply chains (e.g. CF 2016, CGF 2017). The complexity and ineffectiveness of law enforcement in producing countries, as well as the long time lag between enforcement and real impact of the internationally agreed resolutions have put individual businesses sourcing from tropical countries under big pressure. In response, businesses in different sectors have started investing in their supply chain management to avoid reputational risks and satisfy growing civil society, consumer and customer demands (Smith 2008; Walker et al. 2013). Engagement and interest in the issue of transparency in supply chain governance is increasing as more companies make commitments to avoid deforestation (UN 2014).

The NYDF Progress Assessment Report (2016) identified 415 companies in different sectors with corporate zero deforestation commitments, altogether totalling 701 commitments<sup>3</sup>. The report acknowledges that “the global supply-chain movement continues to gain momentum with a continued increase in pledges and progress on implementation...” (Climate Focus 2016).

The analysis of commitments has revealed two main kinds of zero deforestation targets (Donofrio 2017):

#### **1) Zero Gross Deforestation (ZGD)**

---

<sup>3</sup> Usually companies set forest related policies and strategies for different product lines (i.e. main sourcing material vs. packaging) with different time lines and objectives, which explains the discrepancy between the number of companies and their respective commitments.

## 2) Zero Net Deforestation (ZND)

Zero Gross Deforestation is identified as “...no loss in forest area over a given time period caused by conversion of forest to non-forested land” (GOFC-GOLD 2012).

As an NGO strongly pushing for Zero Net Deforestation target by 2020 WWF defines it as follows (Wolosin & Ashley-Cantello 2015):

*"Zero net deforestation" acknowledges that some forest loss could be offset by forest restoration. Zero net deforestation is not synonymous with a total prohibition on forest clearing. Rather, it leaves room for change in the configuration of the land-use mosaic, provided the net quantity, quality and carbon density of forests is maintained. It recognizes that, in some circumstances, conversion of forests in one site may contribute to the sustainable development and conservation of the wider landscape (e.g. reducing livestock grazing in a protected area may require conversion of forest areas in the buffer zone to provide farmland to local communities)".*

Achieving these targets requires coordinated work, robust regulations, continuous policy enforcement and transparent monitoring systems. Although the debate on zero deforestation commitments within grey literature appears well-established, it is still incipient within the peer-reviewed literature – an expected reflexion of the relatively new term. Zero deforestation commitments have shown an increasing trend within Social Responsibility initiatives, despite often ambiguous meaning and not fully clear/consistent definition (Brown and Zarin 2013). A number of initiatives, most prominently CDP's Forest Program, Supply Change and Forest 500, have been tracking commitments made by companies, governments and financial institutions and reporting on whether their rhetoric meets action (Bregman et al. 2016; Donofrio et al. 2017). According to Donofrio et al. (2017), there are currently 302 commitments that use specifically the term “zero deforestation” or “zero net deforestation” across companies and commodities analysed. On the other hand, only 17 peer-reviewed articles featuring “zero deforestation” keywords could be found on the Scopus database as of May 2017. Even fewer comprehensively discuss the term. Thus, further investigation on the use of zero deforestation as a business policy and marketing strategy is needed within the peer-reviewed ambit.

Despite the challenges in an attempt to defining and implementing the “no deforestation commitments”, they might represent an opportunity for the Italian leather industry to demonstrate its dedication to address externalities caused by its production processes and achieve strategic market positioning through a differentiation strategy. This might be even more relevant when considering direct customers of tanneries. As it was already pointed out by a market report in 2015 Italian leather production is directed towards medium and high segments of the market (fashion, furniture, etc.), where consumer standards and expectations are higher when it comes to sustainability issues. When it comes to low manufacturing costs Italy is already not competitive compared to China or Brazil. Besides, demand for consumer goods that are considered luxury items, leather being among them, is correlated with economic growth. Thus, there is a good base for expanding the scope of sustainability strategies and directing efforts towards deforestation issues by investing in traceability within upstream tier of the supply chain. This can bring diverse benefits to the sector. Within the context of increasing awareness among consumers early investment in the issue can help the industry to avoid and be ready for any kind of business or reputational risks. This could compensate for the precaution that full traceability might cause an increase in the global prices of the raw materials. Tracing back leather to its origin can also help the sector ensure the consistency in quality, which according to our respondent, this year became an important concern over materials sourced from Brazil (UNIC, Personal Communication, 2017).

In fact, the global leather industry has already started working in this direction. The international Leather Working Group (LWG) has established a special auditing program called “Hide traceability Audit Protocol” addressing the issue of deforestation in Brazil specifically (2017).

In an attempt to harmonize market standards for green products within the European Union (EU) market the EU Commission has started a couple of Environmental Footprint pilot projects on different commodity sectors, Leather Pilot project being among them (EU Commission, 2017). It is an attempt to draw new boundaries of the leather production and include upstream processes and land use changes that are not currently taken into account (Figure 4).

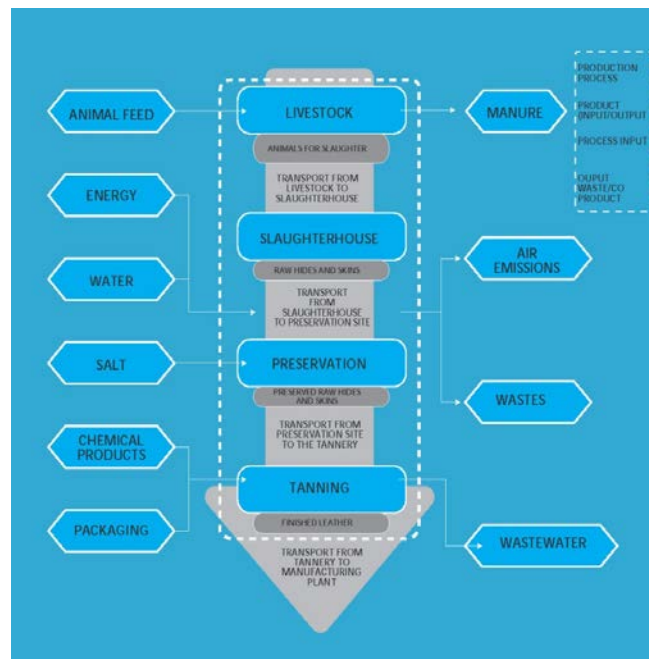


Figure 4. Defining the boundaries of leather production through an LCA (UNIC 2016)

Having enough traceable evidence on the upstream of the supply chain is becoming a more demanded information by clients or customers of the Italian tanneries (UNIC, Personal Communication, 2017)<sup>4</sup>. In their sustainability reports global brands such as IKEA have already started talking about the traceability of leather indicating their commitment “...to ensure full chain of custody to all slaughterhouses globally, and to farm level in high-risk countries.” (IKEA Group, 2016). In fact, during the personal communication with IKEA project leader it was revealed that farm level traceability of the material sourced from Italian tanneries is already accessible, however this information cannot be shared with public due to business confidentiality issues (2016).

These all represent positive developments and extension of the global awareness about the impact of the leather industry from traditional concerns over water pollution and animal welfare to the issue of deforestation and land use changes. Early commitment to avoiding deforestation from the supply chains, reporting on attempts and progresses, engaging in dialogue with local governments, the meat industry and big international brands can help Italian tanning industry to go through the wave of

<sup>4</sup> Due to confidentiality issues, the names of the clients cannot be listed at this point of the research.

possible brand damage and financial risks. By sending signals to its suppliers through corporate policies and collaborating with meat industry through initiatives such as the JBS's Legal Supplier Programme or Brazilian Roundtable on Sustainable Livestock, the Italian leather sector can contribute to changes at farm level that it usually claims not to have enough negotiation power to affect directly.

## **Limitations and recommendations**

Keeping in mind the scope of the analysis and the size of the population sample the results cannot be generalized for the whole sector. A more in depth analysis is needed to back up the discussion points further. Besides, given the fact that most of the small member tanneries rely on UNIC for the communication of their sustainability efforts, they might consider it redundant to invest in communication of the issue on their websites.

However, this paper is part of an ongoing Ph.D. level research on exploring the linkage between Italian leather industry and deforestation in Brazilian Amazon. Future activities will include in-depth interviews and surveys with tanneries, including those outside of the membership of UNIC. The analysis will include also brands and companies representing regular customers of the Italian tanning sector. The future research work will also include field work in Brazil and an in-depth analysis of "zero deforestation commitments" as a policy tool.

## REFERENCES

- Arts, B., 2002. 'Green alliances' of business and NGOs; new styles of self regulation or 'dead-end-roads'? *Corporate Social Responsibility and Environmental Management* 9, 26–36.
- Arts, B., & Buizer, M. 2009. Forests, discourses, institutions: A discursive-institutional analysis of global forest governance. *Forest policy and economics*, 11(5), 340-347.
- Boucher, D., Roquemore, S., and Fitzhugh, E. 2013. Brazil's success in reducing deforestation. *Tropical Conservation Science*, 6(3), 426–445.
- Bowman, M. S., Soares-Filho, B. S., Merry, F. D., Nepstad, D. C., Rodrigues, H., & Almeida, O. T. 2012. Persistence of cattle ranching in the Brazilian Amazon: A spatial analysis of the rationale for beef production. *Land Use Policy*, 29(3), 558-568.
- Bregman, T.P. et al. 2015. *Achieving Zero (Net) Deforestation Commitments: What it means and how to get there*. Global Canopy Programme, Oxford, UK
- Bregman, T.P., McCoy, K., Servent, R., and MacFarquhar, C. 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.
- Brown, S., & Zarin, D. 2013. What does zero deforestation mean. *Science*, 342(6160), 805-807.
- Carbon Disclosure Project (CDP). 2016. *Global Forests Report 2016*. Available at: <https://www.cdp.net/en/research/global-reports/global-forests-report-2016>
- Climate Focus. 2016. *Progress on the New York Declaration on Forests: Eliminating Deforestation from the Production of Agricultural Commodities – Goal 2 Assessment Report*. Prepared by Climate Focus in cooperation with the NYDF Assessment Coalition with support from the Climate and Land Use Alliance and the Tropical Forest Alliance 2020.
- Convention on Biological Diversity (CBD). 2017. *Country Profile: Brazil*. Convention on Biological diversity. Available at: <https://www.cbd.int/countries/profile/?country=br> Last Accessed: May 2017.
- Consumer Goods Forum (CGF). 2017. *The Consumer Goods Forum Board-Approved Resolutions and Commitments: Our Public Work to Drive Positive Business Actions that Benefit People and the Planet*. The Consumers Good Forum (CGF). Available at: [www.theconsumergoodsforum.com](http://www.theconsumergoodsforum.com) Last accessed: May 2017.
- Donofrio, S., Rothrock, P. and Leonard, J. 2017. *Supply Change: Tracking Corporate Commitments to Deforestation-free Supply Chains, 2017* (Washington, DC: Forest Trends, 2017).
- European Commission (EC). 2017. *The Environmental Footprint Projects*. Available at: [http://ec.europa.eu/environment/eussd/smgp/ef\\_pilots.htm](http://ec.europa.eu/environment/eussd/smgp/ef_pilots.htm)
- FAO. 2015. *Global Forest Resources Assessment 2015: Desk Reference*. Food and Agriculture Organization of the United Nations, Rome.
- FERN, 2015. *Stolen Goods. The EU's complicity in illegal tropical deforestation*. Available at: <http://www.fern.org/stolengoods>
- FSC Watch. 2017. Available at: <http://www.fsc-watch.org/>
- DeFries, R.S., Rudel, T., Uriarte, M., & Hansen, M. 2010. Deforestation driven by urban population growth and agricultural trade in the twenty-first century. *Nat. Geosci.*, 3, 178-181.
- Global Canopy Programme (GCP). 2016. *Sleeping giants of deforestation: the companies, countries and financial institutions with the power to save forests. The 2016 Forest 500 results and analysis*. Global Canopy Programme (GCP): Oxford, UK.
- Gibbs, H. K., Munger, J., L'Roe, J., Barreto, P., Pereira, R., Christie, M., Amaral, T. and Walker, N. F. 2016. Did Ranchers and Slaughterhouses Respond to Zero - Deforestation Agreements in the Brazilian Amazon?. *CONSERVATION LETTERS*, 9: 32–42. doi:10.1111/conl.12175
- GOFC-GOLD. 2012. "A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals associated with deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation" (GOFC-GOLD Report version COP18-1, GOFC-GOLD Land Cover Project Office, Wageningen University, Netherlands).

- Greenpeace International. 2009. Slaughtering the Amazon. Available at: <http://www.greenpeace.org/international/en/publications/reports/slaughtering-the-amazon/>
- Gruppo Dani. 2017. Available at: <http://www.zeroimpactleather.com/en>
- IKEA Group. 2016. Sustainability Report. Available at: [http://www.ikea.com/ms/en\\_US/img/ad\\_content/IKEA\\_Group\\_Sustainability\\_Report\\_FY16.pdf](http://www.ikea.com/ms/en_US/img/ad_content/IKEA_Group_Sustainability_Report_FY16.pdf)
- INPE/PRODES. 2016. Monitoramento da floresta Amazônica brasileira por satélite – projeto PRODES. São Paulo, Brasil: Instituto Nacional de Pesquisas Espaciais (INPE). Accessed July 2016. <http://www.obt.inpe.br/prodes>.
- IPCC. 2014. Agriculture, Forestry and Other Land Use (AFOLU). In: IPCC Fifth Assessment Report. 811-922.
- Henders, S., Persson, M., & Kastner T. Trading forests: land-use change and carbon emissions embodied in production and exports of forest-risk commodities. *Environmental Research Letters*. 2015. Vol 10. 5.
- Humphreys, D., 1996. The global politics of forest conservation since the UNCED. *Environmental Politics* 5, 231–256.
- Humphreys, D., 2008. The politics of ‘Avoided Deforestation’: historical context and contemporary issues. *Int. Forest. Rev.* 10, 433–442.
- Kirby, K. R., Laurance, W. F., Albernaz, A. K., Schroth, G., Fearnside, P. M., Bergen, S., ... & Da Costa, C. 2006. The future of deforestation in the Brazilian Amazon. *Futures*, 38(4), 432-453.
- Lawson Sam. 2014. Consumer Commodities and Deforestation. An Analysis of the Extent and Nature of Illegality in Forest Conversion for Agriculture and Timber Plantations. *Forest Trends*. Available at: [http://www.forest-trends.org/publication\\_details.php?publicationID=4718](http://www.forest-trends.org/publication_details.php?publicationID=4718)
- LWG 2017. Leather manufacturers in Italy. Leather Working Group (LWG). Available at: <http://www.leatherworkinggroup.com/leather-manufacturers-and-traders/leather-manufacturers/our-rated-members>. Last accessed: May 2017.
- McDermott, C.L., Humphreys, D., Wildburger, C., Wood, P., Marfo, E., Pacheco, P., Yasmi, Y., 2011. Mapping the core actors and issues defining international forest governance. In: Rayner, J., Buck, A., Katila, P. (Eds.), *Embracing Complexity: Meeting the Challenges of International Forest Governance* (Chapter 2). A Global Assessment Report. Prepared by the Global Forest Expert Panel on the International Forest Regime. IUFRO World Series Volume, Vienna, pp. 19–36.
- McDermott, C. L. 2014. REDDuced: From sustainability to legality to units of carbon—The search for common interests in international forest governance. *Environmental Science & Policy*, 35, 12-19.
- Mertens, B., Pocard-Chapuis, R., Picketty, M. G., Lacques, A. E., & Venturieri, A. 2002. Crossing spatial analyses and livestock economics to understand deforestation processes in the Brazilian Amazon: the case of Sao Felix do Xingu in South Para. *Agricultural economics*, 27(3), 269-294.
- Moutinho, P., Guerra, R., & Azevedo-Ramos, C. 2016. Achieving zero deforestation in the Brazilian Amazon: What is missing?. *Elementa*, 4.
- Pearson, T. R. H., Brown, S., Murray, L., & Sidman, G. 2017. Greenhouse gas emissions from tropical forest degradation: an underestimated source. *Carbon Balance and Management*, 12(1), 3.
- Personal Communication, 2016. Giacomo Zorzi. UNIC.
- Personal Communication. April 2017. IKEA.
- Putz, F. E. and Redford, K. H. 2010. The Importance of Defining ‘Forest’: Tropical Forest Degradation, Deforestation, Long-term Phase Shifts, and Further Transitions. *Biotropica*, 42: 10–20. doi: 10.1111/j.1744-7429.2009.00567.x
- Rudel, T.K., Defries, R., Asner, G.P., & Laurance, W.F. 2009. Changing drivers of deforestation and new opportunities for conservation. *Conserv. Biol.*, 23, 1396- 1405.
- Strassburg et al. 2014. “When Enough Should Be Enough: Improving the Use of Current Agricultural Lands Could Meet Production Demands and Spare Natural Habitats in Brazil.” *Global Environmental Change* 28 (0): 84–97. Available at: <http://www.sciencedirect.com/science/article/pii/S0959378014001046>
- United Nations (UN). 2014. New York Declaration on Forests.



- Unione Nazionale Industria Conciaria (UNIC). 2015. Sustainability Report. Milano, Italy.
- Van Heeswijk, L., & Turnhout, E. 2013. The discursive structure of FLEGT (Forest Law Enforcement, Governance and Trade): The negotiation and interpretation of legality in the EU and Indonesia. *Forest Policy and Economics*, 32, 6-13.
- Visseren-Hamakers, I. J., & Glasbergen, P. 2007. Partnerships in forest governance. *Global Environmental Change*, 17(3), 408-419.
- Walker, R., Moran, E., & Anselin, L. 2000. Deforestation and cattle ranching in the Brazilian Amazon: external capital and household processes. *World development*, 28(4), 683-699.
- Walker, N., Patel, S., Davis, F., Milledge, S., & Hulse, J. 2013. Demand-side interventions to reduce deforestation and forest degradation. International Institute for Environment and Development. 80–86 Gray’s Inn Road, London WC1X 8NH, UK.
- Walker, N., Patel, S., and Kalif, K. 2013. From Amazon pasture to the high street: deforestation and the Brazilian cattle product supply chain. *Tropical Conservation Science*, 6(3), 446–467.
- Wolosin, M and Ashley-Cantello, W, 2015. Zero Net Deforestation Status Report 2015. WWF and Climate Advisers.
- WWF. 2015. Deforestation.Threats. Retrieved from <https://www.worldwildlife.org/threats/deforestation>
- Zumbansen, P. 2010. Transnational legal pluralism. *Transnational Legal Theory*, 1(2), 141-189.