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Matching Brazilian Soybean Production to the EU Sustainability Standards' Requirements. Compliance of the Sojaplus Management Program with the Fefac Guidelines

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ABSTRACT

Soybean is a major ingredient for animal feeding in the EU, which is highly dependent on its import. Brazil is the main exporter of soy meal to Europe contributing to nearly 30% of EU total import of meal. The last ten years saw an increased demand from the EU feed and food industry in using sustainable raw material. In this context, the European Feed Manufacturer Federation (FEFAC) is currently discussing a guideline for the characteristics that sustainable soy production should have. At the same time, China has increased its share of import of soy and has become the main importer of soy in the world. Competition between Europe and Chine for the supply of soy is increasing. Trade barriers, due to complex sustainability requirements from the EU, could affect its import from Brazil. The SOJAPLUS program is a key initiative concerning the sustainability of soy production in Brazil. It was set up by the Brazilian Vegetable Oil Industries Association (ABIOVE) and by the Soybean Farmers Association (APROSOJA-MT). Considering the potential of this initiative to support the supply to the European market of significant amounts of sustainable soy, the objective of this paper is to discuss the possible harmonization of the sustainability criteria defined by these important EU and Brazilian soy market players. The two set of criteria have been compared, adopting the ITC data base and comparison method; the results show that SOJAPLUS comprises all FEFAC principles and most of its criteria. The main difference, however, is related to the verification system, which in SOJAPLUS is a 1st party system (self-verification) while the FEFAC guidelines consider a 3rd party system (audits); a relevant issue, common to both the FEFAC and SOJAPLUS approach, is related to the inclusion of GMO soy in the sustainability guidelines. As the FEFAC guidelines are still in discussion, there is a very interesting opportunity to harmonize both systems aiming at increasing the sustainability of soybean supply from Brazil to Europe by tackling the difficult challenges of 3rd party certification and GMO soy inclusion. The latter being a major concern for EU consumers, policy makers, farmers' associations and other stakeholders involved in the processing and consumption of soy.

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1. INTRODUCTION

Soybean production has increased from 17 million tons in 1950 to a yearly production of 278 million tons in 2013 (FAOSTAT, 2013). Soybean is the most traded agricultural commodity in the world, exported as beans, meal and oil. The main exporters are USA, Brazil and Argentina while China, the EU and India are the main importers. In general terms USA and Brazil sell beans to China (see figure 1), while beans and mainly meals are exported from Brazil to the EU; while soy oil is the main soy product exported to India and other Asia countries. Argentina exports meal to Europe, beans to China and oil to India (WWF, 2015).

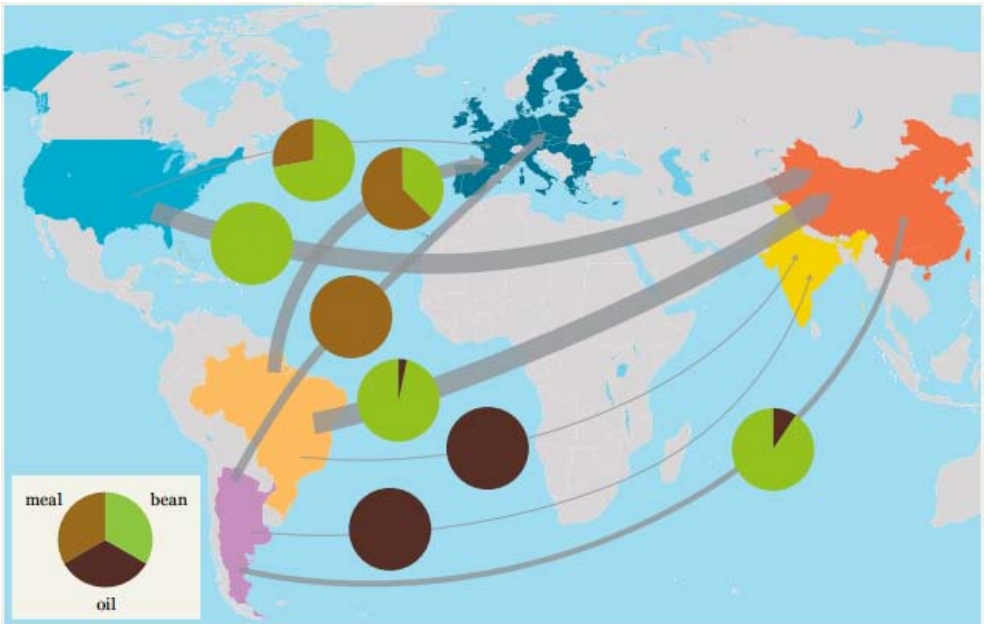

Fig. 1 Soy global trade flow. Source: WWF (2015) based on ISTA, OILWORLD.

Soybean meal is currently the largest source of protein for animal feeding, in particular for dairy, egg, meat (chicken, pork and beef) and farmed fish production. The EU feed industry is highly dependent on import. Brazil is the main exporter of soy meal to Europe contributing to nearly 30% of EU total import of meal (UN Comtrade, 2015) and is also one of the main exporters of NO GM soy (Varacca, 2014).

Brazil produced around 95 million tonnes of soybean in the crop year 2014/2015. More than 50% of soybeans (54 million tonnes) were exported. Forty one million tonnes were crushed into meal (32 million tonnes) and oil (around 9 million m^3). Around 50% of the meal went to the internal market to feed pigs, chicken, beef cattle and dairy cows and around 16 million tonnes of meal were exported to EU. The EU represents 60% of the Brazilian soybean meal export market (Lovatelli, 2016). Soybean oil is used as food-oil and is the main source of raw material to the biodiesel industry. Figure 2 shows the flows of product in the Brazilian soybean chain.

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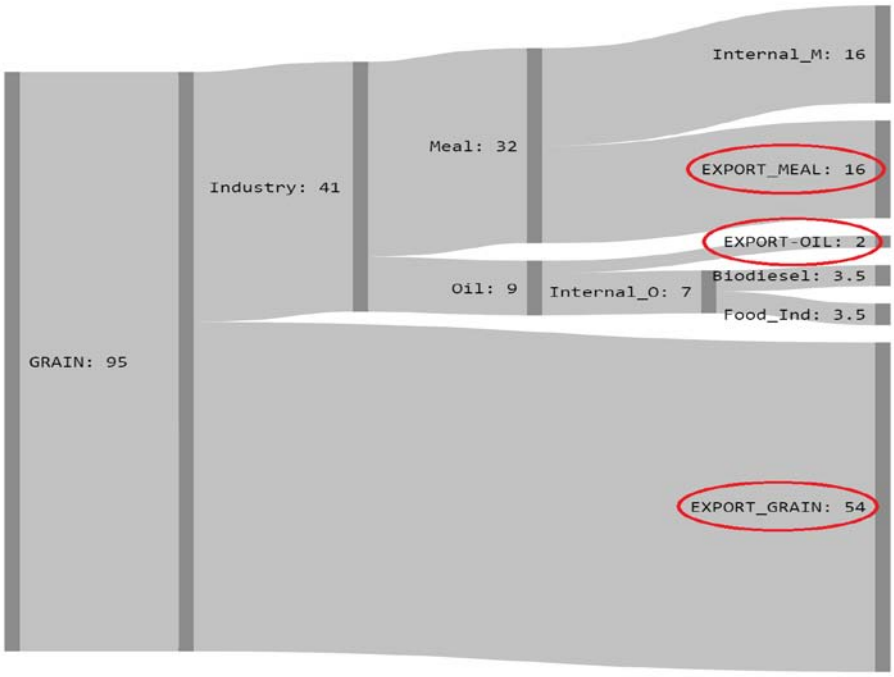

Fig. 2. Brazilian soybean products flow (in million tonnes). Source: ABIOVE, 2015.

The last ten years saw an increased interest from the EU feed and food industry in using sustainable raw material.

The International Trade Center (ITC), a United Nations system for trade related technical assistance, estimated that out of the 170 standards, codes of conduct, audit protocols addressing sustainability 64 (38%) are related to the soybean chain. Six of them are specific to the soybean chain, namely: ADM Responsible Soybean Standard, BEMEFA Belgian Compound Feed Manufacturers, Cargill Triple S Soya Products, CEFETRA Certified Responsible Soya Standard, FEFAC Soy Sourcing Guidelines and RTRS Round table on Responsible Soy Association Standard. (ITC, 2016)

One of the most important EU player, within this context, is the European Feed Manufacturer Federation (FEFAC). FEFAC consists of 25 national associations and employs 110,000 people in around 4,000 production sites. Farm animals in EU-28 consume approximately 480 million tonnes of feed per year, of which about 30% are produced by the compound feed manufactures. Fifty billion euros is the estimated turnover of the European compound feed industry (ITC, 2016). FEFAC is currently discussing a series of guidelines suggesting the characteristics sustainable soy production should have. If not carefully defined (e.g. too far from the producers technical, economic and social context) these sustainability guidelines could result in further raising trade barriers to Brazilian soy export to the EU (FEFAC, 2015).

It should also be considered that China increased its share of import of soy in the last decade and became the first importer of soy in the world (see Figure 3). The EU, on the other hand, has not yet found a feasible solution to the replacement of imported soy as the main protein source for animal feeding (EU Commission, 2011). Last but not least the EU is strongly oriented towards considering GM soy as non sustainable, while GM soy has become a standard production in Latin America, also perceived as sustainable thanks to the no-tillage technique favoured by this type of crop cultivation. Furthermore No-GM soy price premium is uncertain and volatile, not being related to a reference market. This is a constraint to the No-GM soy supply expansion given the necessity for the suppliers to compensate for the high transaction costs related to segregation of non-GM and/or organic soy, and the high risk of contamination with GM soy (Gale, 2015; Varacca, 2014; Brown-Lima, 2010).

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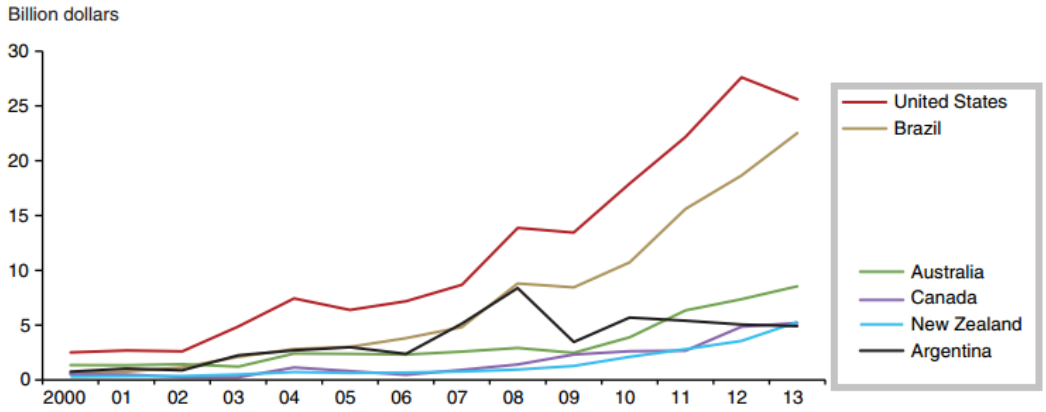

Fig. 3. China agricultural imports, by supplying country, 2000-13. Source: Gale (2015).

The competition between the European and Chinese market is thus increasing and could create serious consequences for the strategic animal production sector in the EU (pork, poultry, eggs, milk and beef). Although Brazil exports mainly meal to EU and beans to China, increased export barriers to the EU can either encourage Brazilian exporters to further direct their trade strategy towards China or lead the EU feed industry to disregard the guidelines suggested by FEFAC. This could result in a strong limitation of the impact on the Brazilian sustainable soy production and trade to the EU.
Within this context the Brazilian SOJAPLUS program represents a key initiative concerning sustainable soy production, since it involves the main soy farmers and processors organizations in Brazil. SOJAPLUS was set up by the Brazilian Vegetable Oil Industries Association (ABIOVE) and by the Brazilian Soybean Farmers Association (APROSOJA-MT) in 2007. The principles of the program APROSOJA are: i) quality of life, ii) best production practices, iii) economic viability, iv) product quality and v) social responsibility.

Being SOAJAPLUS a management program, ABIOVE and APROSOJA have focused on the compliance with Brazilian laws and regulations regarding labour conditions and the New Forest Code, which is a strict federal regulation concerning biodiversity, soil and water protection in Brazil. Currently, a check-list comprising up to 180 criteria regarding environment and labour standards at the soy farm is implemented in around 937 farms (ABIOVE, 2015).

Considering the potential of this initiative to support the supply to the European market of significant amounts of sustainable soy, the objective of this paper is to contribute to reduce the communications barriers affecting the trade of sustainable soy between Brazil and the EU. The harmonization of the sustainability criteria defined by FEFAC and APROSOJA is highly relevant considering the economic importance of the soybean trade between EU and Brazil.

2. METHOD

The web-based ITC Standards map comparison has been adopted to compare the existing soy-related sustainability standards and, in a second stage, to provide a framework to the comparison between the FEFAC and SOJAPLUS sustainability guidelines/program.

ITC provides a web-based tool to compare standards. The service is available free of charge at www.standardsmap.org (ITC, 2016). Besides the comparison between standards, the tools creates an online check list which allows a self-assessment of the compliance to the different standards. The tools functions are divided in: i) identify (set of standard, which apply to the target product/service; ii) quick-scan (main characteristics of the selected standards); iii) compare (comparison of sustainability requirements) and iv) self-assess (check-list).

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An example of how the ITC Standards map works is shown in the following graphs where the FEFAC guidelines are compared to the FAO-SAFA sustainability analytical framework. SAFA is a very broad sustainability assessment guide proposed by FAO (FAO, 2013). The analysis is quantitative, the number of requirements included in the standard/guidelines related to ITC are compared, and two indications are provided: i). a comparison of the standards in relation to the different sustainability areas as a % of the total requirements available in the Standards map; ii) a "degree of obligation" where the timing for applying the requirements referenced in the standard are compared. The sustainability areas considered by ITC are: i) ethics, ii) quality, iii) environment, iv) social and v) management. The timing categories involve immediate action, action or an action with 1, 3 or 5 years deadline, or recommendations with no specific timing for the requirements implementation.

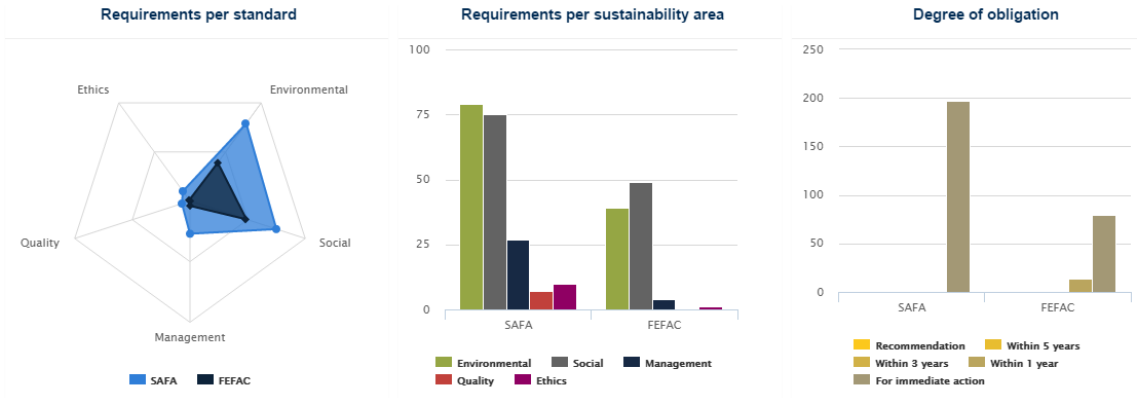

Fig. 4. Comparison between SAFA-FAO and FEFAC Guidelines. Source ITC standarsmaps, 2016.

SOJAPLUS is not included in the ITC standards maps tools. The comparison was carried out comparing criteria per criteria of both FEFAC guidelines and SOJAPLUS management program using the ITC standards maps framework.

3 RESULTS

The result of the comparison of FEFAC and SOJAPLUS shows that, although organized differently, both guidelines share the same principles and criteria (see Fig. 5 and 6).

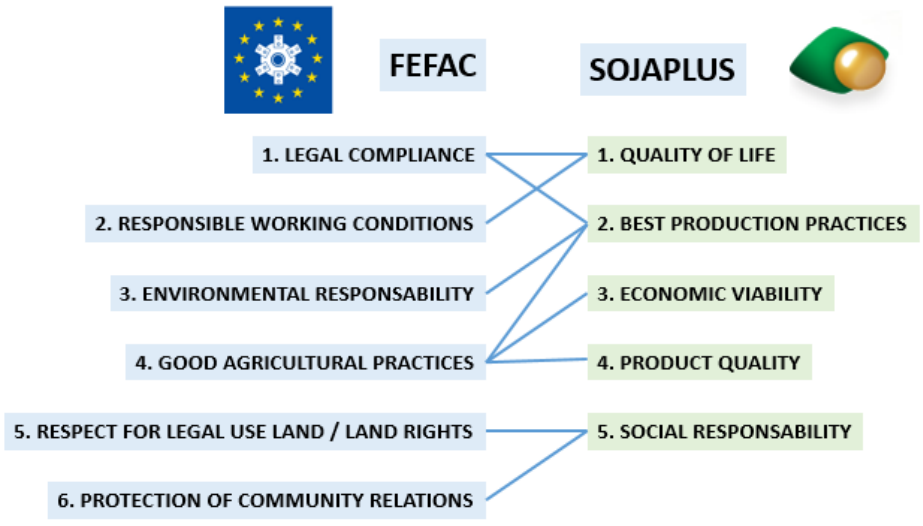

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Fig. 5. Correlations between principles of FEFAC Guidelines and the SOJAPLUS program

Considering the number of requirements (criteria) using the ITC standards map framework, FEFAC and SOJAPLUS are very similar. In particular, being a management program, SOJAPLUS includes slightly more criteria related to the management area (Economic Viability) and product quality (Product/Service Quality Management) than FEFAC. Quality and Management are anyway much less represented in the Guidelines both for FEFAC and SOJAPUS when compared to the social and environmental aspects and also when compared with the ITC total requirements. SOJAPLUS shows a slightly higher number of social requirements than FEFAC, mostly related to labour conditions (Employment and Employment Relations), reflecting both the different Brazilian context and the different perspective of the stakeholders involved in the Guidelines definition.

The requirements of both FEFAC and SOJAPLUS do not address specifically the issue of GMO soy production, which is a main topic of discussion within the EU.

SOJAPLUS do not have any recommendation regarding timing of corrective actions. The timing of the different actions was not considered in the comparison.

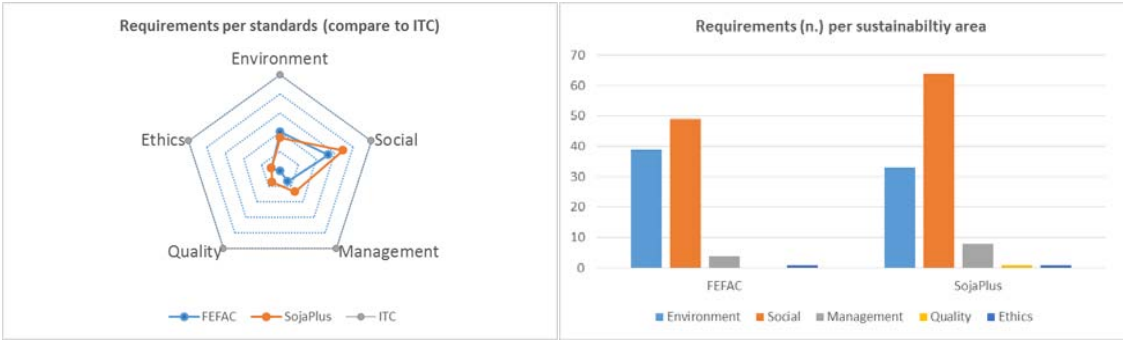

Fig. 6. Comparison between FEFAC and SOJAPLUS.

4. DISCUSSION AND CONCLUSIONS

The comparison of the number of requirements in the different areas showed that FEFAC Guidelines and SOJAPLUS Program are compatible and do not pose relevant problems in terms of their harmonization from the supply side, since SOJAPLUS program is more demanding than FEFAC's in some aspects. The two main exceptions emerged from this study are related to the verification system, which in SOJAPLUS program is a 1st party system (self-verification) while the FEFAC guidelines consider a 3rd party system (with external audits), and the inclusion of GMO soy, which both guidelines allow but are not popular among the EU stakeholders. As the FEFAC guidelines are still in discussion, there is a very interesting opportunity to harmonize both systems aiming at increasing the sustainability of soybean supply from Brazil to Europe, and the EU stakeholders' acceptance.

Although not explicitly included in the SOJAPLUS program, a plan of action with a time schedule is propose by the technicians of the program to the farmers. A possible harmonization and improvement of SOJAPLUS and FEFAC should include this aspect, which is of utmost importance in any management program dealing with limited resources and time restrictions.

The willingness to accept a 3rd party verification system depends on two factors: i) the perceived cost-benefit relation between the farmers sustainability certification and the export market prices; ii) the

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appeal of the certification (mainly related to the inclusion of GMO in the sustainability criteria) to the EU market. From the cost side (mainly transaction costs) the present study results showed that SOJAPLUS criteria are very similar to the existing FEFAC Guidelines, and therefore it could be considered the possibility to further examine how to harmonize the SOJAPLUS and FEFAC criteria to other existing 3rd party certified sustainability schemes. This will reduce the transaction costs related to adopting different schemes, sometimes partially overlapping, and/or preventing sustainable soy to reach a critical mass of sustainable soy compliant to an effective and efficient sustainability scheme.

On the benefit side the discussion of a premium price for sustainable soy is a challenge not considered in the study and should be addressed in further discussions. Further research should also consider the different weighs of the sustainability requirements, according to the stakeholders. The standards comparison, only performed on the base of n. of requirements overlapping, is lacking the relevance each requirement has for the different stakeholders. The possibility to easily adopt, or harmonize, different sets of sustainability requirements depends in fact on the different stakeholders´ willingness, or capacity to accept them. Slight differences in the number of requirements could mask very high barriers to the adoption or exclusion of certain criteria. This can apply for instance, to the inclusion of GM soy among the product's characteristics allowed in the certification schemes. Brazilian producers and EU producers, policy makers, civil society organization and consumers have, on this aspect, quite different views.

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APPENDIX

FEFAC X SOJAPLUS COMPARISON RESULTS

	PRINCIPLES / THEMES	N. of REQUIREMENTS		
		FEFAC	SOJAPLUS	ITC
1.	**ENVIRONMENT**	**39**	**33**	**96**
1.1.	SOIL	4	1	8
1.2.	FORESTS	4	5	5
1.3.	CHEMICALS/NATURAL ORGANIC INPUTS	13	10	16
1.4.	BIODIVERSITY	6	7	22
1.5.	ANIMALS - LIVESTOCK	0	0	10
1.6.	WASTE	6	7	11
1.7.	WATER	4	2	11
1.8.	ENERGY	2	1	6
1.9.	CLIMATE-CARBON	0	0	7
2.	**SOCIAL**	**49**	**64**	**92**
2.1.	HUMAN RIGHTS AND LOCAL COMMUNITIES	7	7	26
2.2.	CONDITIONS OF WORK AND SOCIAL PROTECTION	20	24	25
2.3.	EMPLOYMENT AND EMPLOYMENT RELATIONS	18	28	29
2.4.	HUMAN DEVELOPMENT AND SOCIAL DIALOGUE	4	5	12
3.	**MANAGEMENT**	**4**	**8**	**30**
3.1.	ECONOMIC VIABILITY	0	4	4
3.2.	SUSTAINABILITY MANAGEMENT CRITERIA	4	4	17
3.3.	SUPPLY CHAIN RESPONSABILITIES	0	0	9
4.	**QUALITY**	**0**	**1**	**7**
4.1.	PRODUCT/SERVICE QUALITY MANAGEMENT	0	1	3
4.2.	FMS – PRODUCT SITE	0	0	2
4.3.	FMS – TRACEABILITY	0	0	1
4.4.	FMS – PROCESS/PRODUCT CONTROL	0	0	1
5.	**ETHICS**	**1**	**1**	**11**
5.1.	ANTI-CORRUPTION AND BRIBERY	0	0	8
5.2.	COMPLIANCE TO LEGISLATION	1	1	3

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