

HARMONITOR

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Inventory and characterisation of identified CSLs and selection of bio-based value chains

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1 SUMMARY

The project HARMONITOR (harmonisation and monitoring platform for certification schemes and labels to advance the sustainability of bio-based systems) will improve the effectiveness of certification schemes and labels (CSLs) in different sectors of the EU Bioeconomy and therewith strengthen their use as a co-regulation instrument.

To achieve these objectives, HARMONITOR develops a monitoring system, in close cooperation with its sister projects SUSTCERT4BIOBASED and STAR4BBS. Furthermore, dedicated assessment activities analyse the status of sustainability certification in the EU bioeconomy and finally, HARMONITOR develops a platform for the cooperation and continuous improvement of CSLs.

The basis for these activities is a joint definition of starting points for the project, which include the development of an inventory of CSLs and bio-based value chains. These starting points can be used by all HARMONITOR tasks and partners for respective analysis and assessment steps in HARMONITOR WPs 3, 4, 5 and 6.

The selection has been organised in a joint process with WP2 partners, following a desktop and literature review and analysis, combined with an internal survey to identify those CSLs and value chain elements that could be of specific importance for the subsequent WPs. For the value chains, the selection was based on the further assessment of the findings from WP3 presented in D3.1.

The final inventory of CSLs and value chains for HARMONITOR aims to cover a representative mix of relevant and also innovative CSLs and bio-based products with focus on various feedstocks (including residues and wastes) and a broad range of bioeocomy sectors that are relevant for EU policy making. The inventory of selected CSLs is included in Table 1. The CSLs are further described in section 4.1.

Title of the scheme
Alliance for Water Stewardship (AWS)
Aquaculture Stewardship Council (ASC)
Better Biomass
Better Cotton
Bioplastic Feedstock Alliance (BFA)
Bonsucro
BRCGS Ethical Trade and Responsible Sourcing
BREEAM
Carbon Trust Product Footprint Certification
Cradle to Cradle Certified
EU Ecolabel - Paper

Table 1 CSL inventory for HARMONITOR. own table.





EU Ecolabel - Textiles
EU organic farming logo
Fairtrade International
Fairtrade International Textile Standard
Forest Stewardship Council (FSC)
GlobalG.A.P.
Global Organic Textile Standard (GOTS)
Global Reporting Initiative (GRI)
Global Seafood Alliance (GSA)
Gold Standard
Green Gold Label (GGL)
ISCC EU & ISCC PLUS
Marine Stewardship Council (MSC)
Nature Care Products (NCP) Standard
Naturtextil IVN certified BEST
OK biobased
Pacific Organic Standard
PEFC International (Programme for the Endorsement of Forest Certification)
Rainforest Alliance
Recognised
REDcert, REDcert ²
Round Table on Responsible Soy Association (RTRS)
Roundtable on Sustainable Biomaterials (RSB)
Roundtable on Sustainable Palm Oil (RSPO)
SAI Platform - Farm Sustainability Assessment FSA
SGE 21
Sustainable Agriculture Network (SAN)
Sustainable Biomass Program (SBP)
Sustainable Forestry Initiative (SFI)
Textile Exchange
Together for Sustainability (TfS)
Verified Carbon Standard (VCS)

A large number of CSLs from different sectors relevant to the EU bioeconomy, covering both innovative and established value chains, could be selected to provide a project inventory and a basis for further work in HARMONITOR. These CSLs cover a wide range of different social and





environmental sustainability requirements (compare section 3.1). The selected CSLs from Table 1 can serve as a basis for developing a harmonization and monitoring platform to advance the sustainability of bio-based value chains. Additionally, Table 2 illustrates the comprehensive selection of value chain elements for HARMONITOR. This selection encompasses a diverse array of biomass feedstocks, sourced either from Europe or imported from other regions. It encompasses a combination of cultivated biomass, biomass residues, and waste materials, along with innovative and promising feedstocks like algae. The chosen processing steps primarily target the production of pre-products, which find applications across a wide range of industries. The emphasis on pre-products is rooted in the primary objective of the HARMONITOR monitoring system, which is to assess the effectiveness of business-to-business certification schemes.

Nr.	Feedstocks		Pre-products 1		Pre-Products 2
1	Sugarbeet (a. EU; b. US)	to	Butanediol	to	Polymers (e.g., Polyurethane)
2	Sugarbeet (a. EU; b. US), c. Palm, d. UCO	to	Ethylene glycol / Polyproylene	to	Bioplastic (e.g., PET, PLA)
3	a. Corn (US), b. Wheat Grain (EU)	to	Lactic Acid	to	Thermoplastic Polyester (e.g., PLA)
4	Palm oil, Soy, Canola, UCO	to	Polypropylene glycol, Butanediol, Epichlorohydrin	to	Solvents
5	Algae	to	Algal fatty acids	to	Cosmetics
6	Palm oil	to	Palmitic acid	to	Cosmetics
7		to	Sawn wooden products	to	Building material
8	Maady (primary and	to	Fibreboard	to	MDF/Particle board
9	secondary)	to	Wood packaging materials	to	Packaging materials
10		to	Tall oil	to	Chemicals
11		to	Rayon	to	Yarn
12	Agricultural residues (e.g., straw)	to	Insulation materials	to	Building materials
13	Rubber tree	to	Natural rubber	to	Medical devices
14	Wood secondary/waste	to	Pulp	to	Paper
15	Cotton	to	Cotton fabrics	to	Textile (e.g. T Shirt)
16	Jute/Flax	to	Fabrics	to	Technical textiles

Table 2 Value chain inventory for HARMONITOR. own table, based on results of WP 3, D 3.1.





2 INTRODUCTION

The project HARMONITOR (harmonisation and monitoring platform for certification schemes and labels to advance the sustainability of bio-based systems) aims to help in the improvement of the effectiveness of certification schemes and labels (CSLs) in different sectors of the EU Bioeconomy and therewith strengthen their use as a co-regulation instrument.

To achieve these objectives, HARMONITOR develops a monitoring system, in close cooperation with its sister projects sustcert4biobased and STAR4BBS. Furthermore, dedicated assessment activities will analyse the current status of sustainability certification in the EU bioeconomy and finally, HARMONITOR develops a platform for the cooperation and continuous improvement of CSLs.

The basis for these activities is a joint definition of starting points for the project, which include the development of an inventory of CSLs and bio-based value chains. These starting points can be used by all HARMONITOR tasks and partners for respective analysis and assessment steps in HARMONITOR WPs 3, 4, 5 and 6.

2.1 Scope and structure of this Deliverable

The specific objective of HARMONITOR Task 2.1 was the selection of CSLs as well as a number of bio-based value chains to establish a project inventory and basis for further work in HARMONITOR.

The selection shall thereby focus on CSLs that are relevant to the EU bioeconomy and which address both, innovative as well as established value chains, industrial sectors, feedstocks and products.

The following chapter 3 provides an overview on the general approach, taken to develop the inventory of CSLs and bio-based value chains for HARMONITOR WP2. Finally, chapter 4 presents the selection and briefly describes the CSLs as well as the bio-based value chains.



3 METHODOLOGY

This section describes the methodological approach for the identification and selection of certification schemes and labels as well as bio-based value chains for the further analysis in the different Work packages of the HARMONITOR project. Furthermore, the selection will be an input to Task 2.4 for the development of the platform for continuous improvement of CSLs.

The selection of both elements was organised in subsequent steps, starting with the development of a broader inventory of existing CSLs which were then matched with the value chains for HARMONITOR, selected under Deliverable 3.1. The two following subchapters summarise the different steps, which led to a longlist of CSLs and value chains which are presented in chapter 4.

3.1 Developing a CSL inventory for the HARMONITOR project

3.1.1 Definitions

Our review and selection of CSLs included a wide range of existing elements, which we summarise under the following terms:

Labels:	Labels are used for the communication of certain product characteristics to consumer and customers. A certification process can be a precondition for the labeling of a product. However, there are also products self-labeled by the producer. Further types are labels of testing organisations, testing for example products from different manufacturers in order to label the ones with the best results.							
Sustainability initiatives:	Sustainability initiatives are herein referred to as initiatives compiling sets of sustainability criteria and indicators for a particular purpose, e.g., the analysis of the sustainability of specific biogenic feedstocks. They might be organised as a heterogeneous group of people or institutions with different background and with different interests. The goal of this type of initiative is to reach a consensus between the different parties. In the resulting set of criteria, the different interests are covered equally. This type of initiative is often called "multi- stakeholder initiative" or "roundtable"							
	The second type of initiative included in this context shall be an initiative consisting of a group of people belonging to one party. They can have a background in science and academics, governmental agencies, enterprises or NGOs. The one object, quality sustainability initiatives have in common is the outcome/product, which is a set of criteria for further unspecified or specified use. The outcome can be used internally, e.g., for the sustainability strategy of an organisation							





or may be picked up by other organisations in case the outcome is open source.

Certification schemes: Certification schemes are based on a normative framework, e.g. a standard or a set of criteria and indicators. The output of sustainability initiatives may be used as the basis for a certification scheme. Sustainability initiatives therefore sometimes turn into a certification scheme holder over time as it happened with different roundtables. The most important characteristic of a certification scheme, as it is understood in this context, is that it includes a third-party verification of the sustainability requirements, stipulated in the system documents. Also, the whole certification process is usually based on accreditation standards (e.g. ISO 19011 or ISO 17065), in which the separation of evaluation and certification is an important feature. As a result of the certification process, a label on a product shows compliance with the requirements set by the respective certification scheme. Certificate holders mostly participate voluntarily in a certification scheme. However, there are industries, in which holding certificate facilitates market access, which is, for instance, the case with liquid biofuels sold in European Union markets.

3.1.2 Process for the selection of CSLs

The process of selecting CSLs for HARMONITOR was organised in a threefold approach (compare Figure 1 1).



Figure 1 Process steps for the selection of the CSLs inventory in HARMONITOR. own figure. HARMONITOR Deliverable 2.1





As first step towards the development of CSL inventory, which can serve the specific needs of the different tasks within the HARMONITOR project, an **initial inventory** on the certification landscape in the EU bio-based economy was generated.

This step was based on a comprehensive review, involving literature desktop research, as well as available databases such as the ITC Standards Map (International Trade Centre 2021) and Label Online (Label online 2023). This step revealed a list of ~ 100 certification schemes as a first, preliminary result.

To understand and assess the potential relevance of the identified schemes for the work in HARMONITOR, further desktop research was conducted on the sustainability requirements and sustainability topics included in these CSLs (compare Annex I). This step allowed to introduce filters for further selection and differentiation according to the specific needs of the different HARMONITOR WPs in a subsequent working step.

Secondly, the identified CSLs have been assessed against the specific expectations and the demand formulated by HARMONITOR partners, involved specifically in WPs 3, 4, 5 and 6. For this purpose, a comprehensive, **project internal questionnaire** was developed, including the following questions:

- Which elements of the CSLs are important for your analysis/work (e.g., the sustainability requirements, the verification procedures, risk assessment, etc.)?
- How many CSLs are you planning to analyse in your task or work package?
- To define the parameters for the selection of CSLs. Please indicate which aspects are important for you and the work in your task regarding the CSL selection (e.g., geographical focus, feedstock focus, specific market sectors in the EU bio-based economy, business-tobusiness focus or business-to-focus, the "ambition" of the CSL regarding the comprehensiveness of the sustainability requirements)
- Do you already have recommendations or made a pre-selection of CSLs? If yes, which CSLs should be selected from your perspective (and why)?

The results of the survey are documented in Annex II of this report.

Another important aspect is the relevance and applicability of the CSLs for the value chains selected under WP2. HARMONITOR will use value chains for relevant and/or innovative biobased products to assess specific parameters (e.g., costs) regarding the effectiveness of the CSLs within certain product environments and value chains. For this purpose, the developed inventory of CSLs was matched with the specific value chain elements (compare section 0).

As a result of this activity, an internal longlist of ~ 50 CSLs, which will be used as a starting point for the subsequent activities in other work packages of HARMONITOR has been produced.

The developed longlist is further described in section 4.1.





3.2 Selecting value chains as starting points for HARMONITOR

In addition to the CSL inventory, Task 2.1 selects a minimum of 5 to 10 value chains (according the description of work in the Grand Agreement of the project) as starting points for the subsequent HARMONITOR WPs.

The identification of relevant value chains and products, which shall support the assessment and monitoring of CSLs was part of a comprehensive process under WP 3. As a result, D3.1 presents a preselection of 35 bio-based value chains, including a description of feedstock categories (e.g., starch or sugar), intermediates (e.g., sawn wooden products), potential products (e.g., bioplastics) to be produced in downstream processes as well as a characterisation of these chains regarding their markets, levels of innovation, etc.

Figure 2 presents the pre-selection produced in D3.1.

					Intermediary included in	Feedstock: EU, import. or	Existing bio-based	Innovative bio-based	Feedstock: waste/
#	Intermediary chemical	Sector	biomass type in	Products out	statistics?	both?	market?	product?	residue?
1	Acetic acid	Chemicals	Sugar/starch	PTA, VAM, acetic anhydride, acetate esters	n	both	У	У	n
2	Ethylene glycol	Chemicals	Sugar/starch	PET	n	import	У	У	n
3	Ethylene	Chemicals	Sugar/starch	Polyethylene (PE), HDPE	n	import	У	У	n
4	Butanediol (1,4)	Chemicals	Sugar/starch	Solvent, production of polyurethanes	n	both	У	У	n
5	Lactic acid	Chemicals	Sugar/starch (cane sugar)	PLA	У	import	У	У	n
6	Lactic acid	Chemicals	Sugar/starch (cane sugar)	Salts and esters	У	both	У	n	n
7	Starch polymers	Chemicals	Starch (potatoes), corn	Plastic utensils	У	both	У	n	n
8	Palmitic acid with its salts and esters	Chemicals	Palm oil	Cosmetics, surfactants	У	import	У	n	n
9	Propylene glycol	Chemicals	Oil crop (glycerol)	Propylene glycol	n	both	У	У	both
10	Poly(urethane) PUR	Chemicals	Vegetable oil - soybeans	PUR	n	import	У	у	n
11	Epichlorohydrin	Chemicals	Vegetable oil, glycerol	Solvent in resin, paints	n	both	У	У	both
12	Rayon	Chemicals	Wood	Tarn	У	EU	У	У	n
13	PHA	Chemicals	wastewater	Plastics	n	EU	n	У	У
14	(Poly)propylene	Chemicals	UCO	Plastics	n	both	n	У	У
15	Algal fatty acids	Chemicals	Algae	Cosmetic ingredient	n	both	n	У	n
16	Sawn wooden products	Wood	Wood	Several	У	both	У	n	n
17	Fibreboard (particle, MDF, etc)	Wood	Wood, waste wood	MDF, Particle board	У	both	У	n	У
18	Oriented strand board	Wood	Wood	OSB	У	both	У	n	n
19	Wooden packaging	Wood	Wood	Cases, boxes, drums	У	both	У	n	n
20	Wooden pallets	Wood	Wood	Pallets	У	both	У	n	n
21	Wood wool, wood flour	Wood	Wood	Panels, fibre cement, insulation, filler	У	both	У	n	n
22	Lignin based products	Wood	Wood	Binders and aromatic chemicals, asphalt/bitumen	n	both	n	У	У
23	Tall oil	Wood	Wood	Chemicals	n	both	У	У	У
24	Pulp	Paper	Wood, wastepaper	Graphic paper	У	both	У	n	У
25	Pulp	Paper	Wood, wastepaper	Paper board	У	both	У	n	У
26	Pulp	Paper	Wood, wastepaper	Toilet paper	У	both	У	n	У
27	Cotton fabrics	Textile	Cotton	Woven fabrics, table and bed linen, sacks and bags	У	import	У	n	n
28	Wool fabrics	Textile	Wool	Textile	У	both	У	n	n
29	Jute	Textile	Jute	Textile	у	import	у	n	n
30	Flax	Textile	Flax	Textile, table linen	У	EU	У	n	n
31	Hemp	Textile	Hemp	Textile, insulation materials	n	EU	У	n	n
32	Straw	Building	Straw	building materials	n	EU	У	У	У
33	Biowaste	Waste	Biowaste	Compost	У	EU	У	n	У
34	Leather	Textile	Animal skin	Clothing, textiles	У	import	У	n	n
35	Natural rubber	Chemicals	Natural rubber	Tyres, various products	У	import	у	n	n

Figure 2 Pre-selection of value chains from D3.1 (HARMONITOR D3.1)

Starting from this pre-selection, two steps have been taken to further define and select potential value chains for HARMONITOR. Since, again, this activity shall serve the demand and the objectives of WPs 3 (describe the market relevance of specific value chains and their certifications in the EU market), 4 (develop a benchmarking framework), 5 (the development of the system to monitor the effectiveness of certification schemes) and 6 (assess the costs of certification for different value chains), we used a questionnaire to understand additional underlying parameters for the selection.





In order to support this step, we clustered the relevant feedstock groups with appropriate, intermediate and final products to be produced from these feedstocks (see figure 3, resulting in the two main clusters shown in Figure 4).

					Intermediary	Feedstock: EU,	Existing	Innovative	Feedstock:
					included in	import, or	bio-based	bio-based	waste/
#	Intermediary chemical	Sector	biomass type in	Products out	statistics?	both?	market?	product?	residue?
1	Acetic acid	Chemicals	Sugar/starch	PTA, VAM, acetic anhydride, acetate esters	n	both	У	У	n
2	Ethylene glycol	Chemicals	Sugar/starch	PEI Reluzikulara (PE) NDDE	n	import	У	Y	n
3	Ethylene Rutanodiol (1.4)	Chemicals	Sugar/starch	Solvent execution of colourothonor	n	import	y v	y	n
4 6	Lastic asid	Chemicals	Sugar/starch	Di A	n	import	У	y .	n
6	Lactic acid	Chemicals	Sugar/starch (cane sugar)	Salts and ostors	y	hoth	y V	,	
7	Starch polymers	Chemicals	Starch (notatoes), corn	Plastic utensils	y y	both	y V		
8	Palmitic acid with its salts and esters	Chemicals	Palm oil	Cosmetics, surfactants	, ,	import	, ,		
9	Propylene glycol	Chemicals	Oil crop (glycerol)	Propylene glycol	,	both	, ,	×	both
10	Poly(urethane) PUR	Chemical	Vegetable oil - soybeans	PUR	0	import	ý	ý	n
11	Epichlorohydrin	Chemicals	Vegetable oil, glycerol	Solvent in resin, paints		both	ý	ý	both
12	Ravon	Chemicals	Wood	Tam	v	EU	ý	ý	n
13	PHA	Chemicals	wastewater	Plastics	n	EU	n	ý	v
14	(Poly)propylene	Chemicals	UCO	Plastics	n	both	n	ý	ý
15	Algal fatty acids	Chemicals	Algae	Cosmetic ingredient	n	both	n	ý	n
16	Sawn wooden products	Wood	Wood	Several	Y	both	y	n	n
17	Fibreboard (particle, MDF, etc)	Wood	Wood, waste wood	MDF, Particle board	ý	both	ý	n	У
18	Oriented strand board	Wood	Wood	CSB	y	both	y	n	n
19	Wooden packaging	Wood	Wood	Cases, boxes, drums	ý	both	y	n	n
20	Wooden pallets	Wood	Wood	Pallets	y	both	У	n	n
21	Wood wool, wood flour	Wood	Wood	Panels, fibre cement, insulation, filler	У	both	У	n	n
22	Lignin based products	Wood	Wood	Binders and aromatic chemicals, asphalt/bitumen	n	both	n	У	у
23	Tall oil	Wood	Wood	Chemicals	n	both	У	У	у
24	Pulp	Paper	Wood, wastepaper	Graphic paper	У	both	У	n	у
25	Pulp	Paper	Wood, wastepaper	Paper board	У	both	У	n	у
26	Pulp	Paper	Wood, wastepaper	Toilet paper	У	both	У	n	у
27	Cotton fabrics	Textile	Cotton	Weven fabrics, table and bed liven, sacks and bags	У	import	У	n	n
28	Wool fabrics	Textile	Wool	Textile	У	both	У	n	n
29	Jute	Textile	Jute	Textile	У	import	У	n	n
30	Flax	Textile	Flax	Textile, table linen	У	EU	У	n	n
31	Hemp	Textile	Hemp	Textile, insulation materials	n	EU	У	n	n
32	Straw	Building	Straw	building materials	n	EU	У	У	У
33	Biowaste	Waste	Biowaste	Compost	У	EU	У	n	У
34	Leather	Textile	Animal skin	Clothing, textiles	У	import	У	n	n
35	Natural rubber	Chemicals	Natural rubber	Tyres, various products	Y	import	у	n	n
	/				\sim				
Clue	+or A			Chucker D					
Clus	Eeedstock		Chemical industry	Cluster B	odstock		Wood	and toxtile	c
	Feedstock		chemical muusu y	Fe	EUSLOCK		woou		5
ſ	¥								
	Sugar crops, e.g.,:	(Ir	ntermediate) produ	ct Wo	ody biomass		(Interme	diate) pro	duct
	Sugarcane (L.A.)			Primar	v and second	lary			
	Sugarbeet (LIS/FLI)		Polymers	hio	, mass (FLL/LLS)			Ravon	
	Sugar Deet (05/20)		rolymera	510	111833 (E0/03)		(
		()	polyurethane, starc		\sim		(W000	ay biomass	5)
	Starch crops		polymer\$)		Crops				
	Potatoes (EU)			Cotto	on (Asia/Afric	a)	Wooden	products	and
	Corn (US)		Solvente	Home	(EII) Elay (E	in l		ckaging	$\langle \rangle$
		1.	JOIVEILLS				(han al	ckaging	
	Wheat (US/EU)	()	Polypropylene gluco	, Jute (Inc	lia), Hemp (Ir	idia),	(board	mat., pelle	ets,
l		J	Butanediol,	Rubb	per (Indonesia	a)	wooden	building n	nat.
ſ		1	Epichlorohydrin)				isula	tion mat.)	
	Veg. oils, e.g.,:		_p.c, c,						
	Palm (IN)			Re	sidues, e.g.,:				
	Sour (LIS (AP)		Acids		Straw (EU)			Pulp	
	SUY (US/AR)	(a	cetic acid, lactic acid	l, Biowa	ste (EU). Anir	mal			
	Canola (EU)		palmitic acids)		wastopana	(ELI)	т	extiles	
	UCO (Asia)		[SKIII (EU	, wastepaper	(EO)	(cotton w	ool homn	flav
							(cotton, w	ooi, nemp	, 110,
			Plastics	Aquat	c biomass, e	.g.,:	jut	e fibres)	
			((Poly)propylene,						
		eth	vlene, ethvlene glyc	ol.	Algae (FLI)		(Others	
		cu					(o g rubb	or lostha	ftty
			FIIAJ			-	(e.g, 1000		, 1119
							acio	is, tall oil)	

Figure 3 Clustering the value chain elements from HARMONITOR Deliverable 3.1. own figure.





The connection of the different value chain elements identified in D3.1 to clusters of feedstock categories and corresponding products results in the elements shown in Figure 4.



Figure 4 Clusters of value chain elements to be considered in the selection. own figure.

Finally, an internal questionnaire was used to identify preferences for specific value chains from the project partners, covering institutions from academia, certification schemes, certification bodies, regulatory and market strategy consultancy, all with several decades of experience in sustainability of bioeconomy.

The survey included the following questions:

- Please explain briefly, how and for which purposes you intend to use the selected value chains in your WP?
- Are there specific requirements for the definition of the value chains that are important from the perspective of your WP?
- Do you have any preferences regarding the types of feedstock and the regions of origin for the selection of the value chains?
- Do you have any preferences regarding the products and/or the industry sectors to be included in the selection of the value chains?
- If you look at the elements of value chains included in figure 3: Are there elements that should be included in the value chains selected? In addition: Is there anything that is not in the figures that should be included?
- Do you have any comments or suggestions for the process of the value chain selection? Is there anything we missed?





Furthermore, the following additional selection criteria have been defined:

- The value chain should include an intermediate product, which could be used for further downstream processing (following the scope of HARMONITOR to consider B2B certifications)
- Availability of CSLs covering the value chain elements is important
- The value chains should reflect both established and innovative value chains.

Based on these criteria and the answers to the survey, an additional task to match the elements of the value chain clusters defined in figure 3 with the schemes selected under chapter 0. has been conducted.

The result of this exercise helps to understand the potential coverage of the identified value chain elements by the available CSLs (compare Figure 5).

This first analysis shows, that in theory, each of the value chain elements included in our selection can be covered by an existing CSL. However, a strong focus on the part of the feedstock production can be observed. While the detailed analysis of CSLs and their requirements is part of the benchmarking task in WP4, a potential explanation for this is that a major share of the potential sustainability risks associated with the production of bio-based materials is often attributed to the process of feedstock production (Scarlat et al. 2015). Thus, several of the selected CSLs have been developed, starting with a feedstock focus included in their sustainability requirements.





Value chain element	Alliance for Water Stewardship (AWS)	Aquaculture Stewardship Council (ASC)	Better Biomass	Better Cotton	Bioplastic reedstock Alliance (BFA)	BRCGS Ethical Trade and Responsible Sourcing	BREEAM	Carbon Trust Product Footprint Ceruitcation Cradia to Cradia Cartifiad	EU Ecolabel – Paper	EU Ecolabel – Textiles	EU organic farming logo	Fairtrade International	Fairu aue internauonar rexuie stanuaru Forest Stewerdshin Council (FSC)	Global Organic Textile Standard (GOTS)	Global Reporting Initiative (GRI)	Global Seafood Alliance (GSA)	Gold Standard	Green Gold Label (GGL)	ISCC PLUS	Marine Stewardship Council (MSC)	Nature Care Products (NCP) Standard	Naturtextil IVN certified BEST	Ok plopased	Rainforest Alliance	Recognised	REDcert EU	REDcert [®] Bound Table on Bernonsible Sov Association (BTBS)	Roundtable on Sustainable Riomaterials (RSR)	Roundtable on Sustainable Palm Oil (RSPO)	SAI Platform - Farm Sustainability Assessment (FSA)	SGE 21	Sustainable Agriculture Network (SAN)	Sustainable Biomass Program (SBP)	Sustainable Forestry Initiative (SFI)	Together for Sustainability (TfS)	Verified Carbon Standard (VCS)
Feedstock-Region Sugarcane - South America Maize - North America Maize - Europe Sugarbeet - EU Sugarbeet - US Wheat - EU Soy - South America Soy - South America Soy - US Palm oil Canola - EU UCO - Asia Wood - EU Cotton - Asia Cotton - Africa Hemp - EU Hemp - India Flax - EU Jute - India Natural Rubber - Indonesia																																				
Processing/Product Ethylene - Glycol Biopolymers - e.g., Polyurethane, starch polymers Solvents - e.g., Polypropylene glucol, Butanediol, Acids - e.g., acetic acid, lactic acid, palmitic acids) Bioplastics - e.g., (Poly)propylene, Ethylene, Ethylene glycol, PHA) Textiles Cosmetics Wood products Rayon - e.g., from wood biomass Paper Pulp Medical devices Building materials Packaging materials MDE/Particle board others, rubber, leather End-of-Life (EoL) Recycling of textiles																																				
Energy from wood waste Agricultural residues (e.g., straw)																																				

Figure 5 Coverage of potential value chain elements with selected CSLs. Green fields indicate that the value chain element is covered by the CSL, orange fields indicate that the value chain element is not specifically covered. For more information on uncertainties in data collection, see ANNEX III. own figure.

Based on the different steps outlined above, a longlist of bio-based value chains for further analysis and work in HARMONITOR has been produced. The selection is described in the next chapter.





4 RESULTS - SELECTED CSL AND VALUE CHAINS

This chapter provides an overview on the selected inventory of CSLs and the bio-based value chains for the HARMONITOR project.

4.1 Selected Certification Schemes and Labels

Following the general approach defined under section 3.1, the following table presents the inventory of the selected CSLs.

Table 3 List of selected CSLs for further analysis in HARMONITOR. own table.

CSL	Logo	Short description	Reference						
Alliance for Water Stewardship (AWS)	ALLIANCE FOR WATER STEWARDSHIP	Certification of responsible water use and management practices	(AWS 2022)						
Aquaculture Stewardship Council (ASC)	RELEVENCE AND A DECEMBER OF A	Certification of responsible aquaculture, including environmental, social and economic criteria. Applicable to a wide range of farmed fish and seafood products.							
Better Biomass	BETTER BIOMASS	Focus on the sustainable production, processing, and trade of solid, liquid, and gaseous biomass, including wood pellets, biogas and more. The scope of Better Biomass covers the entire biomass supply chain, from the production of biomass to its processing and end use and includes criteria for responsible land use, biodiversity conservation, and social and economic sustainability. Better Biomass also sets requirements for the reduction of greenhouse gas emissions and the responsible use of water and chemicals.	(Better Biomass 2023)						
Better Cotton	better cotton	Certification of sustainable cotton production, including environmental, social and economic criteria. Applicable to cotton products and supply chains, including raw cotton, yarns, fabrics, and finished products.							
Bioplastic Feedstock Alliance (BFA)	Bioglastic Fendstock Alliance	Sustainability certification of bio-based feedstock and their supply chains	(BFA 2023)						





Bonsucro	BON SUCRO	Bonsucro covers the entire sugarcane supply chain from the production of sugarcane to its processing and trade, including social sustainability, environmental sustainability, and economic sustainability.	(Bonsucro 2023)
BRCGS Ethical Trade and Responsible Sourcing	BR©S	Certification of ethical and responsible sourcing, including social, ethical and environmental criteria. Applicable to a wide range of products and supply chains, including food and beverage, textile and apparel, and consumer goods.	(BRCGS 2023)
BREEAM	STANABLE BUILT FRUNDON	BREEAM is a certification scheme for green building design, construction and operation, including issues such as energy efficiency, water conservation, and materials selection.	(BREEAM 2023)
Carbon Trust Product Footprint Certification	CARBON TRUST	Provides a framework for companies to measure, manage, and reduce the carbon footprint of their products across the entire life cycle, from raw material extraction to disposal. It provides a certification that demonstrates a company's commitment to reducing carbon emissions and addressing climate change.	(The Carbon Trust 2023)
Cradle to Cradle Certified	CERTIFIED cradie to cradie PRODUCTS PROGRAM	Cradle to Cradle Certified is a certification scheme that focuses on sustainable product design and manufacturing, including material health, recyclability, and use of renewable energy.	(Cradle to Cradle Products Innovation Institute 2023)
EU Ecolabel - Paper	Ecolabel Paper	Focusses on paper and board products, aiming to ensure that they are made from sustainably sourced wood fibres, use less water and energy during production, and have lower emissions and waste. It also considers social responsibility and end-of-life management	(European Commission 2023b)
EU Ecolabel - Textiles	Ecolabel Textiles	Aims to ensure stringent environmental and human health criteria throughout the life cycle of textiles, including the use of sustainable materials and chemicals, water and energy efficiency, social responsibility, and end-of-life management. It covers a wide range of products, including clothing, home textiles, and accessories.	(European Commission 2023a)
EU organic farming logo	****	Certification of organic farming, including environmental and social criteria. Applicable to a wide range of agricultural products, including crops, livestock, dairy, honey, mushrooms, and processed food products.	(European Commission 2023c)





Fairtrade International	FAIRTRADE	Certification of fair trade, including social, economic and environmental criteria. Applicable to a wide range of products, including coffee, tea, cocoa, bananas, sugar, honey, cotton, flowers, gold and other non- food products.	(Fairtrade International 2023a)
Fairtrade International Textile Standard	FAIRTRADE TEXTILE PRODUCTION	Certification of fair trade, including social, economic and environmental criteria. Applicable to textile and apparel products, including cotton, wool, silk and other natural fibres.	(Fairtrade International 2023b)
Forest Stewardship Council (FSC)	Д FSC	Verification of sustainable biomass production and supply chain management. Focus on greenhouse gas emissions, environmental and social criteria. Applicable to solid, liquid and gaseous biofuels, as well as biomass used for heat and power.	(FSC 2023)
GlobalG.A.P.	GLOBAL G.A.P.	GlobalG.A.P. is a certification program for sustainable agriculture practices that covers the supply chain, from farm to retail. It includes standards for food safety, environmental sustainability, and social responsibility.	(GlobalG.A.P. 2023)
Global Organic Textile Standard (GOTS)	CANIC TEXTICA ST AND	Certification of organic textile production, including environmental and social criteria. Applicable to textile and apparel products, including fibres, yarns, fabrics, and finished products.	(GOTS 2023)
Global Reporting Initiative (GRI)	GRI	Sustainability reporting standards for organizations	(GRI 2023)
Global Seafood Alliance (GSA)	Global Seafood Alliance	The Global Seafood Alliance (GSA) encompasses a range of certification programs, including the Best Aquaculture Practices (BAP) and the Responsible Fisheries Management (RFM) certification. It sets standards for responsible seafood farming and fishing practices, including environmental sustainability, social responsibility, food safety, and animal welfare.	(GSA 2023)
Gold Standard	Gold Standard	Certification of sustainable development and carbon offset projects	(Gold Standard 2023)
Green Gold Label (GGL)	green gold label	Green Gold Label (GGL) is an international certification programme for sustainable biomass. The scope includes woody, agri- residue and waste wood biomass, as well as bioliquids.	(GGL 2023)





		Green Gold Label primarily focuses on biomass for the production of bio-based chemicals and other products as well as Biomass for electricity and heat production.	
ISCC EU & ISCC PLUS	Seed Sustainage	The ISCC EU certification scheme covers the entire supply chain of biomass and biofuels from the production and harvest of biomass to its processing and trade, including land use, greenhouse gas emissions, and social sustainability. The scope of ISCC Plus is very similar to that of ISCC EU, as both certification schemes share a common foundation. However, ISCC Plus includes additional requirements that go beyond the scope of ISCC EU in certain areas.	(ISCC 2023)
Marine Stewardship Council (MSC)	Marine Stewardship Council	Certification of sustainable fishing, including environmental, social and economic criteria. Applicable to wild-caught fish and seafood products.	(MSC 2023)
Nature Care Products (NCP) Standard	NATURE CARE PRODUCT nature:care.cc	Certification of natural and organic personal care products. The NCP standard particularly includes detergents and cleaning agents, textile and leather care products, pesticides and fertilisers.	(GfaW 2021)
Naturtextil IVN certified BEST	A POURTENTIN	Certification of sustainable textile production, including environmental, social and economic criteria. Applicable to textile and apparel products, including fibres, yarns, fabrics, and finished products.	(IVN 2018)
OK biobased		Certification of bio-based products and their renewable content	(TÜV Austria Holding AG 2023)
Pacific Organic Standard	CERTIFIED	Certification of organic agricultural products and production practices	(PoetCom 2023)
PEFC International (Programme for the Endorsement of Forest Certification)	PEFC	Certification of responsible forest management, including environmental, social and economic criteria. Applicable to natural forests and plantations, and to a wide range of forest products, including timber and non- timber forest products.	(PEFC 2023)
Rainforest Alliance		Certification of sustainable agriculture, forestry and tourism, including environmental, social and economic criteria. Applicable to a wide	(Rainforest Allianc 2023)





		range of products, including coffee, tea, cocoa, bananas, citrus, palm oil, and timber.	
Recognised	recognised envronmental credentials scheme	Certification of renewable energy projects and their carbon offsetting potential	(Accord Australasia 2022)
REDcert, REDcert ²	REDcert Sedentarz zeltinoun Bonaso rebi	A voluntary sustainability certification system focussing on the supply chain of bioenergy and bio-based products based on agricultural biomass, wastes and residues. The REDcert2 certification scheme is an updated version of the REDcert scheme with a broader scope and additional requirements.	(REDcert GmbH 2023)
Round Table on Responsible Soy Association (RTRS)	ON RESPONSIBLE SOY	A global sustainability standard and certification scheme for the responsible production, processing, and trade of soybeans and soy-based products, including animal feed and human food. The scope of RTRS covers the entire soy supply chain from the production of soybeans to their processing and trade, and includes criteria for responsible land use, biodiversity conservation, and social and economic sustainability. RTRS also sets requirements for the reduction of greenhouse gas emissions and the responsible use of water and chemicals.	(RTRS 2023)
Roundtable on Sustainable Biomaterials (RSB)	RSB	The Roundtable on Sustainable Biomaterials (RSB) is a global sustainability standard and certification scheme for biomaterials, including biofuels, bioplastics, biochemicals, and other products derived from biomass. The scope of RSB includes the entire value chain of biomaterials, from biomass production to processing, trade, and end use.	(RSB 2023)
Roundtable on Sustainable Palm Oil (RSPO)	SUSTAINA RILE PALMON	RSPO aims to promote the sustainable production, processing and trade of palm oil and palm kernel oil, as well as their derivatives. The scope of RSPO covers the entire palm oil supply chain, from the plantation to the end user, and includes criteria for responsible land use, biodiversity conservation, human rights, and labor standards. RSPO also sets requirements for the reduction of greenhouse gas emissions and the responsible use of water and chemicals.	(RSPO 2023)





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SAI Platform - Farm Sustainability Assessment FSA	Farm Sustainability Assessment EMANDER	Verification of sustainable farming practices, including environmental, social and economic criteria. Applicable to a wide range of crops, including cereals, fruits, vegetables, oilseeds, pulses, sugar crops, and livestock.	(SAI 2023)
SGE 21	Supervision of the second seco	Sustainability reporting and auditing standards for organizations	(Forética 2023)
Sustainable Agriculture Network (SAN)	SAN Sustainable Agriculture Network	SAN is a certification scheme for sustainable agriculture, focusing on issues such as biodiversity conservation, fair labor practices, and community development.	(SAN 2023)
Sustainable Biomass Program (SBP)		Verification of sustainable biomass production and supply chain management. Focus on greenhouse gas emissions, environmental and social criteria. Applicable to solid, liquid and gaseous biofuels, as well as biomass used for heat and power.	(SBP 2019)
Sustainable Forestry Initiative (SFI)	SUSTAINABLE FORESTRY INITIATIVE	Certification of sustainable forest management, including environmental, social and economic criteria. Applicable to natural forests and plantations, and to a wide range of forest products, including timber and non- timber forest products.	(SFI 2022)
Textile Exchange	Exchange	Sustainability certification of textile and apparel supply chains	(Textile Exchange 2023)
Together for Sustainability (TfS)	TOGETHER FOR SUSTAINABILITY	Global industry-led sustainability initiative for supply chain management in the chemical industry. Aims to improve sustainability practices and drive harmonisation and transparency across the supply chain. TfS focuses on supplier assessments and audits to improve sustainability performance and reduce risks associated with the procurement of goods and services.	(TfS 2023)
Verified Carbon Standard (VCS)	Verified Carbon Standard	Certification of greenhouse gas emission reductions and carbon offset projects	(VCS 2022)

CSLs selected in this inventory cover a wide range of feedstocks, products and economic sectors. Also, they vary significantly with regards to their purpose and the elements and components





included. Furthermore, in some cases, the selection includes general frameworks, which are further specified by certification add-ons or by modules for dedicated products. Examples are the different standards under the Textile Exchange framework (i.e., the Organic Content Standard, the Global Recycled Standard, the Recycled Claim Standard, the Responsible Alpaca Standard, the Responsible Down Standard, Responsible Mohair Standard and the Responsible Wool Standard) or under the Pacific Ocean Standard (i.e., Crops, Livestock, Aquaculture).

The different HARMONITOR WPs will source their selections based on their specific needs and demand from this inventory.

While the selected schemes will be analysed and described, amongst others, in HARMONITOR WP4 (Benchmarking of CSLs), we prepared a first general overview¹ regarding the general coverage of the sustainability topics in the selected CSLs.

This overview is structured into two parts, a simplified first overview, shown in Figure 6 and a mapping with a higher resolution of the coverage of specific sustainability requirements in ANNEX I.

The overview was generated based on the system documents of the CSLs (see respective document links in Table 3) and on information provided by the ITC standards map.

¹ It is important to note, that this overview is not intended to benchmark or judge the selected CSLs. We are aware, that each of the CSLs has been developed for a specific purpose and that the coverage of sustainability topics included might therefore also differ significantly. HARMONITOR Deliverable 2.1



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Sustainability Pillar	Торіс	Alliance for Water Stewardship (AWS)	Aquaculture Stewardship Council (ASC) ¹	Better Biomass	Better Cotton	Bioplastic Feedstock Alliance (BFA)	Bonsucro BRCGS Ethical Trade and Responsible Sourcing	BREEAM	Carbon Trust Product Footprint Certification	Cradle to Cradle Certified	EU Ecolabel - Paper	EU Ecolabel - Textiles	EU organic farming logo	Fairtrade International ²	Fairtrade International Textile Standard	Forest Stewardship Council (FSC)	GlobalG.A.P. ³	Global Organic Textile Standard (GOTS)	Global Reporting Initiative (GRI)	Global Seafood Alliance (GSA) ⁴	Gold Standard	Green Gold Label (GCL)	ISCC PLUS & ISCC EU Marine Stewardship Council (MSC)	Nature Care Products (NCP) Standard	Naturtextil IVN certified BEST	OK biobased	Pacific Organic Standard ⁶	PEFC International	Rainforest Alliance	Recognised	REDCert ^{2 &} REDcert EU	Round Table on Responsible Soy Association (RTRS)	Roundtable on Sustainable Biomaterials (RSB)	Roundtable on Sustainable Palm Oil (RSPO)	SAI Platform - Farm Sustainability Assessment (FSA)	SGE 21	Sustainable Agriculture Network (SAN) ⁷	Sustainable Biomass Program (SBP)	Sustainable Forestry Initiative (SFI) ⁸	Textile Exchange ⁹	Together for Sustainability (TfS)	Verified Carbon Standard (VCS)
	Soil																																									
	Water																																									
	Biodiversity																																									
	Forest																																									
Environment	Input																																									
	Waste																																									
	Energy																																									
	Climate																																									
	Animals																																									
	Human Rights																																									
Social	Labour rights																																									
	Local communities																																									
	Economic Viability																																									
Management	Sustainability Management																																									
and Ethics	Supply Chain Responsibilities																																									
	Ethics																																									
	Product / service quality																																									
	management	-																																								
Quality	Manufactured products quality																																									
	technical and environmental																																									
	specifications																																									
1	roou/reed management systems																																									

Figure 6 General overview on the broad sustainability topics included in the requirements of the selected CSLs. own table

Green fields indicate that the sustainability topic is addressed by the CSL, Orange fields indicate that the topic is not addressed.

¹ Different standards available under ASC; in this selection: ASC-MSC Seaweed (Algae)

² Different standards available under Fairtrade International; in this selection: Fairtrade International Trader Standard ³ Different standards available under GlobalG.A.P.; in this selection: GlobalG.A.P. crops certification

⁴ Different standards available under GlobalG.A.P.; in this selection: GlobalG.A.P. crops certification ⁴ Different standards available under GSA; in this selection: GSA - Best Aquaculture Practices

HARMONITOR Deliverable 2.1

⁵ Different standards available under Green Gold Label; in this selection: GGLS1, GGLS2, GGLS4, GGLS5, GGLS6
⁶ Different standards available under Pacific Ocean Standard; in this selection: Pacific Organic Standard Aquaculture
⁷ Based on Sustainable Agriculture Framework (SAF)

⁸ Different standards available under SFI; in this selection: SFI 2022 Forest Management Standard

⁹ Different standards available under Textile Exchange, in this selection: Textile Exchange Organic Content Standard, Global Recycled Standard, and Recycled Claim Standard





As Figure 6 shows, the selected CSLs cover a wide range of sustainability topics. The majority of topics are addressed by over two-thirds of the CSLs. Only the topic manufactured products quality technical and environmental specifications is addressed by about half of the CSLs. In addition, there are few topics that are addressed only by a subset of CSLs. These are livestock and food/feed management systems.

4.2 Selected Value Chains

In addition to the inventory of CSLs, the approach described under section 0 has led to a selection of 16 combinations of value chain elements which can serve as starting points for HARMONITOR.

Following, the pre-selection process described in Deliverable 3.1, the selection covers feedstocks and products from the following industrial sectors:

- agriculture, forestry, aquaculture,
- chemical industry,
- cosmetics,
- building sector,
- packaging,
- paper industry,
- textile industry and
- technical applications.

Table 4 CSL inventory for HARMONITOR. own table.

Nr.	Feedstocks		Pre-products 1		Pre-Products 2	Description
1	Sugarbeet (a. EU; b. US)	to	Butanediol	to	Polymers (e.g., Polyurethane)	Sugar from sugarbeet crops produced in the EU or the US is processed into butanediol, which serves as a precursor for polymers like polyurethane.
2	Sugarbeet (a. EU; b. US), c. Palm, d. UCO	to	Ethylene glycol / Polyproylene	to	Bioplastic (e.g., PET, PLA)	Sugarbeet crops produced in the EU or the US, Palm oil or used cooking oil, originated from Asia are converted into ethylene glycol or





						polypropylene, which are then used in the production of bioplastics
						such as PET and PLA.
3	a. Corn (US), b. Wheat Grain (EU)	to	Lactic Acid	to	Thermoplastic Polyester (e.g., PLA)	Starch crops like corn from the US or wheat grain produced in the EU are transformed into lactic acid, which is used to produce thermoplastic polyester materials like PLA.
4	Palm oil, Soy, Canola, UCO	to	Polypropylene glycol, Butanediol, Epichloro- hydrin	to	Solvents	Different oil crops such as palm oil, soybean oil, canola oil or used cooking oil are processed into polypropylene glycol, butanediol, and epichlorohydrin, which are utilized in the production of solvents.
5	Algae	to	Algal fatty acids	to	Cosmetics	Algal fatty acids are derived from algae (which can be produced in a wide range of locations and production systems) and find applications in the cosmetics industry
6	Palm oil	to	Palmitic acid	to	Cosmetics	Palm oil is converted into palmitic acid, which is used in cosmetic products.
7		to	Sawn wooden products	to	Building material	Wood is transformed into sawn wooden products
8	Woody (primary and	to	Fibreboard	to	MDF/Particle board	and building materials like fibreboard,
9	Secondary)	to	Wood packaging materials	to	Packaging materials	MDF/particle board, and wood packaging materials.





10		to	Tall oil	to	Chemicals	Woody feedstocks are also used to produce tall oil, which is used in the production of chemicals.
11		to	Rayon	to	Yarn	Woody feedstocks are further processed into rayon, which is then used to produce yarn.
12	Agricultural residues (e.g., straw)	to	Insulation materials	to	Building materials	Agricultural residues such as straw, produced in EU agriculture are transformed into insulation materials, contributing to the production of building materials.
13	Rubber tree	to	Natural rubber	to	Medical devices	Natural rubber is derived from rubber trees and serves as a component in the production of medical devices.
14	Wood secondary/waste	to	Pulp	to	Paper	Wood waste is processed into pulp, which is then utilized in the manufacturing of paper.
15	Cotton	to	Cotton fabrics	to	Textile (e.g. T Shirt)	Cotton fibres are transformed into cotton fabrics, commonly used in textiles such as T- shirts.
16	Jute/Flax	to	Fabrics	to	Technical textiles	Natural fibres such as jute and flax are converted into fabrics, specifically used in the production of technical textiles.

The following figures illustrate the selected value chain elements, chosen on the basis of D3.1 as well as their potential coverage by the CSLs selected for the HARMONITOR inventory. The first assessment of the potential applicability of CSLs to the different value chain elements can serve as a first orientation regarding the potential coverage and focus of the CSLs. The analysis will be continued in greater detail in WP4.





In the case of more than one feedstock is included in the value chain, the schemes indicated in the figure will address at least one the feedstocks mentioned.



Figure 7 Value chain 1, sugar to biochemical. own figure



Figure 8 Value chain 2, sugar to bioplastic. own figure







Figure 9 Value chain 3, starch to bioplastic. own figure



Figure 10 Value chain 4, vegetable oil to solvents. own figure







Figure 11 Value chain 5, algae to cosmetics. own figure



Figure 12 Value chain 6, vegetable oil to cosmetics. own figure

The following figure presents a compact overview for three value chain element combinations, based on woody biomass resources.







Figure 13 Value chains 7, 8, 9, woody biomass resources to building and packing material. own figure



Figure 14 Value chain 10, woody biomass resources to chemicals. own figure







Figure 15 Value chain 11, woody biomass resources to textiles. own figure



Figure 16 Value chain 12 agricultural residues to building materials. own figure











Figure 18 Value chain 14 woody biomass to paper. own figure

The final figure presents an overview of value chains 15 and 16 and the corresponding CSL coverage.







Figure 19 Value chain 14 cotton, flax and jute to textiles. own figure

5 OUTLOOK

The inventory of CSLs and value chain elements presented in the report, aim to facilitate the development of key products within the HARMONITOR project. These products include: i) the HARMONITOR platform for continuous improvement, ii) the monitoring system, iii) the comprehensive assessment tasks in the project.

The HARMONITOR platform for continuous improvement provides a valuable opportunity for stakeholders to exchange knowledge, share best practices, and explore innovative developments within the certification community. The development of this platform is closely tied to the outcome of the HARMONITOR benchmarking activities (WP 4), which draw upon the CSL inventory developed for this Deliverable. Through the benchmarking process, a deeper understanding of the commonalities, differences, and operational aspects of the CSLs will be gained. These insights, to be shared over the coming months until the end of 2023, will greatly support the conceptualization of the platform, which began in May 2023 under WP2. By leveraging the findings from the benchmarking activities, the platform development can effectively incorporate the most relevant information and facilitate collaboration among stakeholders for continuous improvement in the certification community.





The monitoring system within HARMONITOR will undergo further development in collaboration with two sister projects, namely SUSTCERT4BIOBASED and STAR4BBS. The CSL inventory and value chain elements presented in this Deliverable serve as essential inputs for the monitoring framework. The framework's primary objective is to evaluate the effectiveness of CSLs in the European Union's bioeconomy. By leveraging the collective expertise and resources of these projects, HARMONITOR aims to enhance and refine its monitoring system, thereby providing valuable insights into the performance and impact of CSLs within the bioeconomy context.

Finally, HARMONITOR will conduct a comprehensive assessment of the costs (direct and indirect) and benefits associated with certification. This analysis will focus on evaluating the implementation of CSL requirements and verification procedures in specific contexts. To facilitate this assessment, the developed value chain elements can be utilized to gain insights into the economic implications of applying the selected CSLs across diverse feedstocks, industrial sectors, and products. This examination aims to provide a deeper understanding of the economic impacts stemming from the adoption of CSLs, enabling informed decision-making and promoting sustainable practices throughout various stages of the value chain.





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Sustainability Pillar	Торіс	Requirement	Alliance for Water Stewardship (AWS)	Aquaculture Stewardship Council (ASC) ¹	Better Biomass	Better Cotton	Bonsucro	BRCGS Ethical Trade and Responsible Sourcing	BREEAM	Cradle to Cradle Certified	EU Ecolabel - Paper	EU Ecolabel - Textiles	EU organic farming logo	Fairtrade International ²	Fairtrade International Textile Standard	Forest Stewardship Council (FSC)	GlobalG.A.P. ³	Global Organic Textile Standard (GOTS)	Global Reporting Initiative (GRI)	Global Seafood Alliance (GSA) ⁴	ISCC PLUS & ISCC EU	Marine Stewardship Council (MSC)	Nature Care Products (NCP) Standard	Naturtextil IVN certified BEST	Pacific Organic Standard ⁵	PEFC International	Rainforest Alliance	Recognised	REDCert ^{2 &} REDcert EU	Round Table on Responsible Soy Association (RTRS)	Roundtable on Sustainable Biomaterials (RSB)	Roundtable on Sustainable Palm Oil (RSPO)	SAI Platform - Farm Sustainability Assessment (FSA)	SGE 21	Sustainable Biomass Program (SBP)	Textile Exchange ⁶	Together for Sustainability (TfS)	Verified Carbon Standard (VCS)	
Environment	Soil	Soil: general principle																																					
Environment	Soil	Criteria on soil erosion																																					
		Criteria on soil																																					
Environment	Soil	conservation																																					
		Criteria on soil quality,																																					
		productivity and																																					
Environment	Soil	biodiversity																																					
Environment	Soil	Criteria on soil nutrients																																					
_	G 11	Criteria on soil																																					
Environment	2011	contamination																																					
		Criteria on soil preparation																																					
Environmont	Soil	cooking																																					
LIVIOIIIIeitt	501	Criteria on soil																																					
		enhancement by crop																																					
Environment	Soil	rotation or intercronning																																					
		Criteria on soil																																					
		enhancement by use of																																					
Environment	Soil	cover crops																																					
Environment	Soil	Criteria on soil compaction																																					
Environment	Soil	Other criteria on soil																																					



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		Criteria on verification of
		mandatory certificates and
		permits related to water
Environment	Water	use
		Criteria on water
nvironment	Water	management plan
		Criteria on water usage
Environment	Water	records keeping
		Criteria on water resources
		monitoring, use and
Environment	Water	consumption
		Criteria on water
		dependencies and water
Environment	Water	scarcity
		Criteria on natural
		wetlands maintained in
Environment	Water	undrained conditions
		Criteria on water reuse,
Environment	Water	recycling and harvesting
		Criteria on water
Environment	Water	extraction / irrigation
		Criteria on mitigation of
		transboundary effects of
Environment	Water	water pollution
		Criteria on surface and
		ground water
Environment	Water	contamination / pollution
		Criteria on quality of water
Environment	Water	used in production
		Criteria on principles and
		practices on water disposal
Environment	Water	/ storage
		Criteria on limitations of
Environment	Water	wastewater volume
		Criteria on wastewater
		quality management and
Environment	Water	treatment



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		Criteria on wastewater
		basic parameters for
Environment	Water	textile industry
		Criteria on wastewater
		advanced parameters for
Environment	Water	textile industry
		Criteria on wastewater
		parameters for paper
Environment	Water	industry
		Other criteria relating to
Environment	Water	water
		Biodiversity: overarching
Environment	Biodiversity	principle
		Criteria to ensure
		adherence to international
		and national conventions
		on biodiversity and best
		practices (CITES, CBD,
Environment	Biodiversity	CMS, CCD, among others)
		Criteria on sustainable
		management and use of
Environment	Biodiversity	natural resources
		Criteria on impact
		assessment policy for new
Environment	Biodiversity	production
		Criteria on impact
		mitigation prior to
		production / harvesting
Environment	Biodiversity	operations
		Principles and criteria for
		the conversion of
		agriculture land to non-
Environment	Biodiversity	agriculture purposes
		Criteria on human
		settlements in or close to
		production areas (to
Environment	Biodiversity	reduce food loss)



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		Criteria on spatial
		management criteria
		(creating / maintaining /
		protecting set asides,
		buffer zones or
Environment	Biodiversity	conservation areas)
		Criteria relating to
		identifying risks and
		impacts on ecosystem
Environment	Biodiversity	services
		Criteria on natural
		wetlands and/or
		watercourses affected by
Environment	Biodiversity	production
		Criteria on safeguards
		against fragmentation of
Environment	Biodiversity	ecosystems/habitats
		Criteria on habitat/eco-
		system restoration/
Environment	Biodiversity	rehabilitation
		Criteria on post-
Environment	Biodiversity	production practices
		Criteria on maintaining or
		protecting rare,
		threatened or endangered
Environment	Biodiversity	ecosystems
		Criteria on protection of
		rare, endangered or
		threatened species and
Environment	Biodiversity	their habitats
		Criteria on the protection
		of ecosystems against
Environment	Biodiversity	invasive species
		Criteria on maintaining,
		restoring, prioritizing
Environment	Biodiversity	native species
		Criteria on wildlife -
Environment	Biodiversity	general principle



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		Criteria on rare.
		threatened or endangered
Environment	Biodiversity	wildlife species
		Criteria for regulated and
		suitable housing of wildlife
Environment	Biodiversity	living specimens
		Criteria for regulated use
		and access to wildlife
Environment	Biodiversity	species and native flora
		Criteria for minimized
		impacts on wildlife
Environment	Biodiversity	populations
		Criteria for the monitoring
		and protection of High
Environment	Biodiversity	Conservation Value Areas
		Criteria on prohibition of
		production on land with
		High Conservation Value
		(HCV) with conversion cut-
		off date not later than
Environment	Biodiversity	December 2009
		Criteria on prohibition of
		production on land with
		High Conservation Value
		(HCV) with non-conversion
		cut-off date between
		January 2011 and
Environment	Biodiversity	December 2020
		Criteria on HCV as
		intended in the HCV
Environment	Biodiversity	Resource Network
		Criteria on prohibition of
		production on land with
		High Conservation Area
		recognized by independent
Environment	Biodiversity	expertise



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		Criteria on legally
		protected and
		internationally recognized
Environment	Biodiversity	areas for their biodiversity
Linn on interic	bloartersty	Criteria on biodiversity
Environment	Biodiversity	hotspots
	Distances	Criteria for no net loss in
Environment	Biodiversity	biodiversity
		Criteria for net positive
Environment	Biodiversity	gain in biodiversity
		Criteria related to
		technological means to
		map locations of areas of
Environment	Biodiversity	ecological importance
		Criteria to avoid crop
		disease cross-
Environment	Biodiversity	contamination
		Criteria on diversity of
		planting materials, seeds
Environment	Biodiversity	and crops genotypes
		Criteria for the use of
Environment	Biodiversity	biotechnologies
		Practices and criteria for
		open pit/underground
		(extractive metals and
Environment	Biodiversity	minerals practices)
		Criteria and practices on
		the clearing of land with
Environment	Biodiversity	fire or explosives
		Criteria for monitoring /
		preserving aquaculture
Environment	Biodiversity	density/ diversity
		Specific criteria for wild
		catch fisheries: procedures
		regarding management
		and reduction of discards -
Environment	Biodiversity	non target species



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		Specific criteria for wild
		catch fisheries: prohibition
		of destructive fishing
		methods such as dynamite
Environment	Biodiversity	and poison
		•
		Specific criteria for wild
		catch fisheries: sustainable
		exploitation of marine
		resources including
		restoration of overfished
Environment	Biodiversity	and depleted stocks
		Other criteria on
Environment	Biodiversity	biodiversity
		Forestry issues: general
Environment	Forest	principle
		Criteria on legal
Environment	Forest	compliance: Harvest rights
		Criteria on legal
		compliance: Payments for
Environment	Forest	harvest rights
		Criteria to prevent
Environment	Forest	deforestation
		Criteria on regeneration of
Environment	Forest	tree cover after logging
		Criteria on sustainable
Environment	Forest	timber harvesting
		Criteria to remediate
Environment	Forest	deforestation
		Criteria to enhance
Environment	Forest	conservation of forests
		Criteria on maintenance of
		records of forests at least
Environment	Forest	5-years period



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		Criteria on forest
		management plan (FMP)
		baseline objectives and
		assessment of current
		conditions (stockings,
		species, age classes of
Environment	Forest	trees etc)
		Criteria on FMP annual
Environment	Forest	allowable cut
		Criteria on FMP annual
		allowable exploitation of
		non-timber forest
Environment	Forest	products
		Criteria on inclusion of all
		forest resources in at least
		long-term objectives of
Environment	Forest	FMP
		Criteria on preparation of
		public summary of the
Environment	Forest	FMP
		Criteria on FMP results be
		incorporated in a
		consistent and replicable
Environment	Forest	monitoring system
		Criteria specifically defined
		in FMP as baseline
		indicators for monitoring
Environment	Forest	of forests resources
		Criteria on making publicly
		available FMP monitoring
Environment	Forest	results
		Criteria for the conversion
		of forests into production
Environment	Forest	lands
		Criteria on mix land-use
Environment	Forest	system in agroforestry
		Criteria on shadow, fruit or
		timber producing plants in
Environment	Forest	the farm



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		Other criteria on forestry
		conservation (e.g.
		prohibition of genetically
		modified trees,
		natural/semi natural
		forests reflecting natural
		disturbance, scenic
Environment	Forest	landscapes, etc.)
		Chemicals: general
Environment	Input	principle
		Criteria on prohibition of
		use of any pesticides and
		other related chemical
Environment	Input	substances
		Criteria on prohibition of
		use of hazardous
		chemicals (as defined by
		WHO 1A and B, 2 and the
		Stockholm and Rotterdam
Environment	Input	conventions)
		Criteria on prohibition of
		use of hazardous
		chemicals (as defined by
		PAN International List of
		Highly Hazardous
		Pesticides and REACH
Environment	Input	Convention)
		Criteria on respect list of
		prohibited chemicals as
		harmful or a risk to human
Environment	Input	health
		Criteria on respect list of
		prohibited chemicals as
		harmful or a risk to the
Environment	Input	environment



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		Criteria on restricted use
		of other substances which
		have impact on human
		health and the
Environment	Input	environment
		Criteria on respect of list of
		permitted chemicals of low
		concern for the intended
Environment	Input	use of product
		Criteria on the use of
		surfactants, cleaning
Environment	Input	agents and foam inhibitors
		Criteria on the use of
Environment	Input	formaldehyde
		Criteria on the use of
Environment	Input	nanomaterials
		Criteria on the use of flame
Environment	Input	retardants
		Criteria related to the use
		of chlorine gas as
Environment	Input	bleaching agent
		Criteria related to the use
		of azo dyes that may
		cleave aromatic amines
		which are harmful to
Environment	Input	human health
		Criteria on the
		biodegradability of
Environment	Input	substances
		Criteria on appropriated
Environment	Input	tests of "toxicity"
		Criteria on the use of
		mercury, cadmium, lead,
Environment	Input	chromium VI



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		Criteria on implementation
		of an Integrated Pest
Environment	Input	Management (IPM) system
		Criteria on chemical
		application records and
Environment	Input	reduction
		Criteria on chemicals :
		selective & targeted
Environment	Input	application
	mpar	Criteria on Protection of
		non-target areas from agro
Environment	Input	chemical use
Little Online it	mpar	Criteria on regular re-
		calibration of agro-
		chemicals application
Environmont	Input	oguinment
LINIOIIIIeitt	mput	Critoria on the principle to
		use posticides as last
Environment	Innut	use pesticides as last
Environment	Input	resort only
		Criteria on chemicais
En de contra de terreteries de la contra de la	lawset	variation to prevent pest
Environment	Input	resistance
		criteria on the monitoring
		narmful organisms by
		observations in the field or
		warning, forecasting and
		early diagnosis systems
Environment	Input	(e.g. traps)
		Criteria asking use of
		biological control agents to
		comply with
		internationally recognized
		standards and/or
Environment	Input	protocols
		Criteria on training on
		chemicals handling and
Environment	Input	exposure



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		Criteria on training on
		Integrated Pest
Environment	Input	Management (IPM)
		Criteria on organic natural
		inputs: general principles
Environment	Input	& practices
		Criteria on use of organic
Environment	Input	fertilizer
		Criteria related on
Environment	Input	synthetic fertilizers
		Criteria on chemicals
Environment	Input	storage and labelling
		Criteria on storage and
		maintenance procedures
		for chemicals equipment
Environment	Input	and containers
		Criteria on chemical
Environment	Input	substances disposal/waste
		Criteria on treatment of
		waste of chemical
		substances and related
Environment	Input	materials
		Criteria on use and
		management of hazardous
Environment	Input	chemicals
		Criteria on general
		prohibition of use of GMOs
		/ genetically modified
Environment	Input	varieties
		Criteria for use and
		management of GMOs /
		genetically modified
Environment	Input	materials



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		Criteria for risk prevention
		with regards to use of
		GMOs / genetically
		modified varieties
		(invasion / cross-
		pollination /
Environment	Input	contamination&)
		Criteria on traceability and
		labelling of genetically
		modified crops and
Environment	Input	products
		Criteria on production /
Environment	Input	process chemicals
		Criteria on the use of
Environment	Input	biocides
		Criteria on testing the final
		product regarding
		accumulation of chemical
Environment	Input	residues
Environment	Input	Other criteria on input
		Waste management:
Environment	Waste	general principle
		Criteria on waste disposal
		(incl. solid waste, non-solid
		waste, excl. hazardous
Environment	Waste	waste)
		Criteria on waste
Environment	Waste	segregation
		30
		Criteria on principles and
		nractices on avoidance of
		uncontrolled waste
Environment	Waste	landfilling
Livionnent	vvasie	Criteria on principles and
		nractices on the use of fire
		to eliminate waste
		(prevention uncontrolled
Environment	Waste	on-site waste burning)
LINIUIIIEII	VVdSLe	



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		Criteria on handling /
		disposal of waste by third
Environment	Waste	parties
		Criteria on treatment and
Environment	Waste	use of solid waste
		Criteria on monitoring and
		measuring solid waste
Environment	Waste	volumes
		Criteria on reducing solid
Environment	Waste	waste volumes
		Criteria on reducing / re-
Environment	Waste	use / recycle solid waste
		Criteria on disposables
Environment	Waste	measured/reduced
		Criteria on treatment and
Environment	Waste	use of non-solid waste
		Criteria on monitoring and
Environment	Waste	measuring waste toxicity
		Criteria on disposal of
Environment	Waste	hazardous waste
		Criteria on prevention of
		run-off of waste chemicals,
En de la contra de la	14/2	mineral and organic
Environment	waste	substances
Environmont	Masta	criteria on air quality /
Environment	vvaste	Criteria on pollution
		incidents mitigation:
		procedures for risks
		monitoring and records
Environment	Wasto	keeping
environment	waste	Criteria on mitigation of
		(transboundary) effects of
Environment	Waste	air pollution
Livironment	vvasie	
		and other pollution
Environment	Waste	nuisance
LINIOIIIEIIC	vvasie	nulbance



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- · ·		Criteria on principles and
Environment	Waste	practices on compositing
		Criteria on principles and
Environment	Waste	nractices on nackaging
En an on mene	Waste	Criteria on consumer
		information regarding
		sustainable use and
Environment	Waste	disposal of product
LINNOITHEIL	waste	
		Criteria on principles and
Environment	Waste	practices on mine tailings
2	Waste	Criteria on air pollution
		along the textiles
Environment	Waste	production process (SSCT)
		Criteria on S and NOx
		emissions for paper
Environment	Waste	industry (SSCT)
	,, doce	Other criteria on waste
Environment	Waste	management
		Criteria on energy
		consumption monitoring /
Environment	Energy	recording
		Criteria to reduce use of
Environment	Energy	energy resources
		Criteria relating to the
		application of clean
Environment	Energy	production practices
		Criteria on storage of
		energy <mark>(</mark> incl. fuel,
Environment	Energy	electricity&)
		Criteria for the use of
		renewable energies
Environment	Energy	including solar, wind, etc
		Specific criteria for the use
Environment	Energy	of solar energy
		Specific criteria for the use
Environment	Energy	of wind energy



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		Specific criteria for the use
Environment	Energy	of wood-based energy
		Criteria for the use of
Environment	Energy	biofuels
		Criteria for monitoring the
Environment	Energy	use of biofuels.
		Other criteria on energy
		consumption and
Environment	Energy	management
		GHG policies: general
Environment	Climate	principle
		Criteria on monitoring
Environment	Climate	GHG carbon emissions
		Criteria on quantifying
Environment	Climate	GHG emissions
		Criteria on reducing GHG
Environment	Climate	emissions
		Criteria on performing
		analysis of possible
		alternatives to reduce GHG
Environment	Climate	emissions
- · ·		Criteria on sequestration
Environment	Climate	of green-house gases
		Criteria on soil or trees
- · ·		sequestration of
Environment	Climate	greenhouse gazes
Environment	Climate	Criteria on additionality
Environment	Climate	critoria on Carbon
Environment	Climata	Criteria on Carbon
Environment	Climate	Critoria on using offects
Environment	Climate	Criteria on using onsets
Environment	Climato	externalitie
environment	Climate	Criteria on type of carbon
Environment	Climato	offsets project
environment	Climate	Criteria on registry of
Environment	Climato	carbon projects
LINIOIIIIEIIL	Ciinate	Criteria on crediting
Environment	Climate	neriods
LINNORMERIC	Clinate	perious



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		Criteria on specific climate
Environment	Climate	adaptation activities
		Criteria on High Carbon
F	Climate	Stock areas monitoring
Environment	Climate	and management
Environment	Climata	Criteria on high carbon
Environment	Climate	landscapes protection
		Other criteria on carbon
Environment	Climate	policies and management
Environment	Animals	Animals: general principle
		Criteria on animals
Environment	Animals	treatment and welfare
Environment	Animals	Criteria on animals feeding
		Criteria on daily access to
		clean drinking water for
Environment	Animals	animals
		Criteria on animals having
Environmont	Animals	periods of light and dark
LINIOIMent	Animais	within each 24 hour period
Environment	Animals	Criteria on animal housing
		Criteria on animal stocking
		density following official
Environment	Animals	regulations
		Criteria on outdoor access
Environment	Animals	for animals
		Criteria on protection from
Environment	Animals	predators
- · ·		
Environment	Animais	Criteria on animal preeding
		Criteria on minimum ago
Environment	Animals	for young animals wearing
Environment	Annua	ion young annuas wearing



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		Criteria on procedures on
Environment	Animals	animal identification
		Criteria on procedures on
Environment	Animals	animal castration
		Criteria on procedures on
Environment	Animals	animal testing
		Criteria on the use of
Environment	Animals	electric prods with animals
		Criteria on animals'
Environment	Animals	physical integrity
		Criteria on transport of
Environment	Animals	animals
		Criteria on procedures on
Environment	Animals	slaughter
		Criteria on setting an
Environment	Animals	Animal Health Plan
		Criteria on animals
Environment	Animals	medication
		Criteria on procedures to
		prevent the on site and off
		site spread of animal
Environment	Animals	disease
		Criteria on monitoring
Environment	Animals	animals mortality on site
		Criteria on animal feed
Environment	Animals	responsible sourcing policy
Freedoment	A i	Criteria on origin of animal
Environment	Animals	feed
E	A	Criteria on quality of
Environment	Animais	animal feed
E	Animala	Criteria on organic animal
Environment	Animais	reed
Environment	Animals	Critoria on littor / manura
LINIOIMENL	Animais	Specific criteria for
		beekeeping: interior /
Environment	Animals	exterior housing
LIVIUIIIEIL	Allinais	



MARMONITOR

		Specific criteria for
		beekeeping: honey
Environment	Animals	extraction process
		Specific criteria for
Environment	Animals	aquaculture: polyculture
		Specific criteria for
		aquaculture: analysis of
Environment	Animals	water quality
		Specific criteria for
		aquaculture: systems in
		place to minimize the
		unintentional release or
Environment	Animals	escape of farmed species
		Specific criteria for
		aquaculture: use of
Environment	Animals	hatchery raised seed
		Specific criteria for
		aquaculture: prohibition of
		prophylactic use of
Environment	Animals	antimicrobials
Environment	Animals	Other criteria on animals
		Criteria on human rights:
Social	Human Rights	general principle
		Criteria on policies and
		procedures addressing
Social	Human Rights	human rights
		Criteria on ongoing
		processes for human rights
Social	Human Rights	due diligence
		Criteria on human rights
		due diligence in conflict-
Social	Human Rights	affected areas
		Criteria on human rights
		policy endorsed at
		appropriate level
Social	Human Rights	(seniority& budget)
		Criteria on human rights
		violations grievance
Social	Human Rights	mechanism



SSO HARMONITOR

		Criteria on grievance
		committee being gender
		balanced in its
Social	Human Rights	composition
		Criteria on grievance
		procedures being
Social	Human Rights	transparent and accessible
		Criteria on using
		independent expertise to
		assess human rights
		violations risks and
Casial	Users on Disks	adequate policies to
Social	Human Kights	address them
		conditions overarching
Social	Labour rights	
SOCIAI	Labour rights	Critoria on ovistonco of
		nublicly available policy
Social	Labour rights	defining workers' rights
	Labour rights	Criteria on setting up
		procedures to manage
		basic labour rights in the
Social	Labour rights	workplace
	3	
		Criteria on scope of
		workers' rights and
		benefits applicable equally
Social	Labour rights	to all types of workers
		Criteria on ILO Core Labour
Social	Labour rights	Standards (Suppliers)
		Criteria related to
		compliance with all ILO
		core labour standards are
Social	Labour rights	verified by a third party



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		Criteria on conditions of
		employment: general
Social	Labour rights	principle
		Human resources
		management: general
Social	Labour rights	principle
		Criteria on policies and
		procedures to monitor
		workers' satisfaction at
Social	Labour rights	work
		Criteria on voluntary
		employment - No forced
Social	Labour rights	labour (ILO 29 & 105)
		Criteria on policies that
		prohibit the use of physical
Social	Labour rights	or psychological violence
		Criteria on the prohibition
		of monetary deposits,
		financial guarantees or
		retention of personal
Social	Labour rights	possessions
		Critorio en illegal /ouriur
		deductions or foos (incl
Social	Labour rights	Recruitment fees (Incl.
Social	Labour rights	Criteria on debt bondago
JUCIAI	Labour rights	Criteria for advance
Social	Labour rights	navments requests
Jociai		payments requests
		Critaria on rotantian -f
		workers' documentation
		and personal pessessions
Social	Labour rights	(ID passport)
Social	Labour rights	(ID, passport) Criteria on workers
		mobility and freedom of
Social	Labour rights	movement
Jocial		Criteria on right to refuse
Social	Labour rights	overtime
Jociai	Labour rights	overenne



MARMONITOR

		Criteria for keeping records
Social	Labour rights	of disciplinary measures
		Criteria on forced labour
Social	Labour rights	remediation policy
		Criteria on security issues /
		role and behaviour of
Social	Labour rights	security guards
		Criteria on privacy
Social	Labour rights	protection
		Criteria related to child
		labour and minimum age
Social	Labour rights	(ILO 138)
		Criteria related to worst
		forms of child labour (ILO
Social	Labour rights	182)
		Criteria on child labour
Social	Labour rights	legal compliance policy
		Criteria relating to
		maintaining age records of
Social	Labour rights	workers
		Criteria on child labour
		remediation policy
		(including assistance to
Social	Labour rights	families)
Social	Labour rights	Critoria on childron
Social	Labour rights	attendance to school
Jocial		Criteria for hiring and
Social	Labour rights	employing young workers
Social	Labour rights	chipioying young workers
		Criteria on good conditions
Social	Labour rights	of work for young workers
	Labour rights	Criteria on young workers
Social	Labour rights	working hours
		Criteria on young workers
		access to effective
Social	Labour rights	grievance mechanisms



		Criteria on non- discrimination at work (ILO
Social	Labour rights	111)
		Criteria related specifically
		to non-discrimination
Social	Labour rights	based on gender
		Critoria related aposifically
		to non-discrimination of
Social	Labour rights	persons with disabilities
		Criteria on non-
		discrimination regarding
Social	Labour rights	unions Critoria on non-
		discrimination against
		workers using the
		organisation's grievance
Social	Labour rights	mechanisms
		Criteria on discrimination
Social	Labour rights	at recruitment stage
		Criteria on discrimination
Social	Labour rights	remediation policy
C		Criteria on freedom of
Social	Labour rights	association (ILO 87)
Social	Labour rights	Bargaining (ILO 98)
		Criteria on joint
		committees / trade unions
Social	Labour rights	/ labour associations



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		Criteria on the formation
		or workers representation
		In countries where
		reedom of association and
Social	Labour rights	collective bargaining is not
Social	Labour rights	supported by legislation
		Critoria on communicating
		Eroodom of Association
Social	Labour rights	rights to workers
Social		Criteria on occupational
		health and safety as
Social	Labour rights	defined in ILO 155
	Laboar rights	Criteria relating to safety
Social	Labour rights	at work (ILO 184)
	0	Criteria on safety at work -
Social	Labour rights	legal compliance
	0	Criteria on workplace
Social	Labour rights	safety
		Criteria on policies in place
		for verification and
		maintenance of buildings
Social	Labour rights	safety
		Criteria on maintenance of
		safety of machinery,
Social	Labour rights	equipment and materials
a		Criteria on electrical
Social	Labour rights	equipment's safety
		Criteria on fire
Casial	Laborand La	preparedness (drills,
SUCIAI	Labour rights	Critoria on regular and
		scheduled emergency evit
Social	Labour rights	maintenance
Social		Criteria on emergency first
Social	Labour rights	aid kits



SSO HARMONITOR

		Criteria on workers
		equipment costs (incl.
Social	Labour rights	PPEs and uniforms).
		Criteria on documented
		emergency management
		plan and publicly available
Social	Labour rights	evacuation procedures
		Criteria on safety
		procedures for handling
Social	Labour rights	chemicals
		Criteria on safety
		procedures being in local
		languages/understandable
Social	Labour rights	by workers
		Criteria on safety
		equipments & personal
Social	Labour rights	protective equipment
		Criteria on monitoring of
Social	Labour rights	accidents records
		Criteria on workers' access
		to basic medical services:
		Infirmary at production
		site / transportation to off-
Social	Labour rights	site medical facilities
		Criteria on regular medical
Social	Labour rights	checks
		Criteria on provision of
Social	Labour rights	medical care services
		Criteria on workers'
		compensation for medical
		costs in case of work
Social	Labour rights	related accidents
		Criteria on workers' access
Social	Labour rights	to safe drinking water



SSO HARMONITOR

		Criteria on workers' access
		to decent sanitary facilities
		at work
		(showers/wc/changing
Social	Labour rights	rooms etc)
		Criteria on workplace
		conditions (air quality,
Social	Labour rights	lighting, noise)
		Criteria on minimization of
Social	Labour rights	mineral dust
		Criteria on provision of
		housing and sanitary
		facilities for workers and
Social	Labour rights	their families
		Criteria on safe and
		appropriate housing
		conditions, incl.
		dormitories and canteens
Social	Labour rights	for workers
		Criteria on workers' access
Social	Labour rights	to personal storage space
		Criteria on transportation
		of workers to production
Social	Labour rights	site
		Criteria on prevention and
		treatment of prevalent
Social	Labour rights	diseases in the area/region
		Criteria on employment /
		hiring practices - legal
		compliance with national
Social	Labour rights	regulation
		Criteria on transparent
		recruitment processes,
		including through any
Social	Labour rights	labour intermediaries



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		Criteria on employment /
		recruitment agencies'
		compliance with the
		organization's labour
Social	Labour rights	rights policy
		Criteria on recruitment
Social	Labour rights	fees
		Criteria on communication
Social	Labour rights	of terms of employment
		Criteria for the use of
		legally binding labour
Social	Labour rights	contracts in written form
		Criteria on use of formal
		format or template for
		labour contracts to define
		all rights and obligations of
Social	Labour rights	workers
		Criteria on clear
		employment contracts in a
o		language understandable
Social	Labour rights	to the worker
		criteria on workforce
		reduction policies and
Social	Labour rights	practices - legal
JULIAI	ranoni rights	Criteria on termination of
Social	Labour rights	employment
JULIAI	Labour rights	Criteria on protection of
Social	Labour rights	Conventions (95
Jocial	Labour rights	Criteria related to equal
Social	Labour rights	remuneration (II O 100)
	Lubour rights	Criteria on fair and timely
Social	Labour rights	payment of wages
	200000.0000	Criteria on non-authorized
Social	Labour rights	wage deductions



SSO HARMONITOR

		Criteria on wage
		compensation issues and
Social	Labour rights	policies
		Criteria on workers
		information about legally
Social	Labour rights	authorized deductions
		Criteria on principles and
		practices to secure a
		Minimum Wage based on
		sector or region
Social	Labour rights	specificities
		Criteria on principles and
		practices to secure a Living
		Wage based on sector or
Social	Labour rights	region specificities
		Criteria on calculating
		wage gap to reach Living
Social	Labour rights	Wages
		Criterion on realistic work
		targets for production,
Social	Labour rights	quota or piece work
		Criteria on Employment
a		Agency conditions on
Social	Labour rights	payment of wages
Ci-l	Laborated La	Criteria for payroll records
Social	Labour rights	and pay slips
Casial	1 - h	Criteria related to
Social	Labour rights	maximum working nours
		Criteria related to
		waivers/national
Cosial	Labour vi-l-+-	exemptions to maximum
Social	Labour rights	Critoria on workers'
		entitlement to breaks (o g
Social	Labour rights	moal broaks)
Social	Labour rights	mear preaks)



SSO HARMONITOR

		Criteria related to hours of
		work & overtime
Social	Labour rights	monitoring
		Criteria on overtime being
		voluntary and
Social	Labour rights	compensated
		Criteria on Medical Care
		and Sickness Benefits
Social	Labour rights	Convention (ILO C130)
		Criteria on workers' access
Social	Labour rights	to medical insurance
		Criteria on pensions and
Social	Labour rights	social security benefits
		Criteria related to
		waivers/national
		exemptions to full scope
		coverage of social benefits
Social	Labour rights	for all employees
		Criteria on 1 rest day off in
		7-days period or more
Social	Labour rights	stringent policy
		Criteria on 2 rest days,
		each of consecutive 24
Social	Labour rights	hours, in a 14-days period
		Criteria on paid leave:
		general policy (public
Ci-l	Laborated 1.1	nolidays, annual leave, sick
Social	Labour rights	leave, casual leave)
		Criteria on special leave
Casial	1 - h	(sickness, marriage, family
Social	Labour rights	leave)
Casial	Labour rights	criteria on maternity
Social	Labour rights	Critoria on child care
		cinterna on child care
Social	Labour rights	penetits and on-site day-
Social	Labour rights	care raciities



SSO HARMONITOR

		Criteria on gender policies
Social	Labour rights	at work - general principles
		Criteria relating to
Social	Labour rights	women's rights at work
		Criteria relating to sexual
Social	Labour rights	exploitation / harassment
		Criteria on women's access
		to health and safety
Social	Labour rights	services
		Criteria on scope of female
		workers' rights and
		benefits applicable equally
		to all types of female
		workers (full time,
		seasonal, part time,
		migrants, coming from
Social	Labour rights	minority groups, etc.)
		Criteria on management
		systems practices to
		monitor, evaluate and
		remediate gender specific
Social	Labour rights	issues
		Criteria to reduce the
Social	Labour rights	gender wage gap
		Criteria on female workers'
		entitlement to breaks (e.g.
		meals/breastfeeding
Social	Labour rights	breaks)
		Criteria for assessment of
		female workers
		performance (for
Social	Labour rights	promotion, trainings)
		Criteria on incentives to
		women to develop their
		careers (e.g. specific
Social	Labour rights	training)



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		Criteria on family-friendly
		policies to increase the
		labour force participation
Social	Labour rights	of women
		Criteria on integration of
		women migrants in labour
Social	Labour rights	force
		Criteria relating to
		factoring gender
		considerations in impacts
		and risks assessment of
Social	Labour rights	production
		Criteria on ensuring
		participation of
		women/minorities in
Social	Labour rights	management
		Criteria on development
		assistance policies which
		promote the economic
Social	Labour rights	role of women
		Criteria on migrant,
		seasonnal, temporary and
		non full time workers's
		contract employment
		regarding the protection of
Social	Labour rights	their labour rights
Social	Labour rights	Criteria on home-workers
		Criteria on vulnerable
		workers not handling
Social	Labour rights	hazardous work
		Criteria on assessment of
		vulnerable workers
		performance (for
Social	Labour rights	promotion, trainings)
		Criteria on the use of
Social	Labour rights	prison labor



SSO HARMONITOR

		Criteria for equal rights and benefits applicable to
Social	Labour rights	full time employees and workers and sub- contracted labour
		Criteria related to requirements to train workers on labour and
Social	Labour rights	human rights Criteria on training on
Social	Labour rights	Criteria on training of workers on procedures to deal with accidents
Social	Labour rights	Criteria relating to training supplier management and workers on sexual harassment
Social	Labour rights	Criteria related to training programs for workers' personal development and career advancement
Social	Labour rights	Criteria on workers awareness of procedures and best practices
Social	Labour rights	Criteria on H&S training being free of charge and taking place during working hours
Social	Labour rights	Criteria related to female workers' access to training programs
Social	Labour rights	Criteria on young workers trained on Occupational Health and Safety



MARMONITOR

		Criteria on training
		programs for young
Social	Labour rights	workers
500101	Labour rights	Criteria on apprentice
		programs for young
Social	Labour rights	
Social	Labour rights	workers
		Other criteria relating to
Social	Labour rights	conditions of work
		Other criteria relating to
		the conditions of
Social	Labour rights	employment
		Other criteria relating to
Social	Labour rights	empowerment of workers
		Criteria on assessment of
		impacts of local activities
		on local human rights such
	Local	as health, safety and
Social	communities	security
		Criteria on impact
		assessment for local
		communities' access to
		basic services such as
	Local	electricity water
Social	communities	sanitation etc
300101	communities	Criteria on activities not
		advorsaly affecting local
	Local	auversely affecting local
Casial	Local	communities access to
Social	communities	Criterie en land title and
Casial	Local	criteria on land title and
Social	communities	legal use rights
	Local	Criteria on customary
Social	communities	rights of tenure
	Local	Criteria on women's land
Social	communities	ownership
		Criteria on involuntary
		resettlement, physical
	Local	displacement and/or
Social	communities	economic displacement



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		Criteria on planning /
	Local	implementation of
Social	communities	resettlement activities
		Criteria on compensation
	Local	and benefits for displaced
Social	communities	persons
		Criteria on livelihood
	Local	restoration for displaced
Social	communities	persons
		Criteria on assessing
		production practices
	Local	possible impacts on food
Social	communities	security
		Criteria related to
		production practices that
o	Local	reduce food and feed
Social	communities	waste
		Critoria relating to conduct
	Local	criteria relating to conduct
Social	Local	towards communities
300101	communities	Criteria relating to
		indigenous neonles as
	Local	defined in ILO convention
Social	communities	169
Jocial	communities	Criteria relating to the
	Local	protection of indigenous
Social	communities	rights
	communities	Criteria relating to
		establishment of a code of
	Local	conduct for local and
Social	communities	indigenous communities
		Criteria on the protection
	Local	of minority rights and
Social	communities	marginalized groups
		Criteria on basic human
	Local	local communities
Social	communities	engagement



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		Criteria on engagement &
	Local	consultation with local
Social	communities	communities
		Criteria on Free, Prior and
	Local	Informed Consent (FPIC) of
Social	communities	local communities
		Criteria on grievance
	Local	mechanisms for affected
Social	communities	communities
		Criteria on traditional and
	Local	cultural production
Social	communities	practices
		Criteria on traditional
		knowledge used for
		conservation and
	Local	sustainable use of
Social	communities	biodiversity
		Criteria on compensation
		for use of local
		communities facilities
		(traditional knowledge,
	Local	infrastructure access and
Social	communities	benefits sharing)
		Criteria on supporting local
	Local	communities economic
Social	communities	development
	Local	Criteria on hiring workers
Social	communities	from local communities
		Criteria on purchasing local
	Local	materials, goods, products
Social	communities	and services
		Criteria on community
		investment: services and
		benefits offered to
	Local	communities beyond the
Social	communities	business' operations


MARMONITOR

	Local	Criteria on Community
Social	communities	Engagement
	Local	Gender issues: general
Social	communities	principle
	Local	Criteria on gender policies
Social	communities	and best practices
		Criteria on factoring
		gender equity
		considerations in
	Local	stakeholder engagement
Social	communities	process
		Criteria on upgrading the
		status of and wages for
	Local	traditional areas of
Social	communities	women ^[] s work
		Criteria relating on
		distribution networks and
	Local	access to markets / buvers
Social	communities	for women
		Criteria on access to
		financial services for
	Local	women (payment, credit.
Social	communities	savings, subsidies)
		Criteria on increased
		access to finance and
	Local	support services for
Social	communities	women entrepreneurs
	contractico	
		Criteria on internationally
		recognized / legally
		nrotected sites and
	Local	cultural heritage (e.g
Social	communities	UNESCO Convention)
	Local	Criteria on the protection
Social	communities	of socio-cultural sites
	communico	al addition cultural allocad



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		Cuitorio en historiael
	Local	criteria on historical,
Social	communities	artefacts trade
JUCIAI	communities	Criteria on local access to
		historical cultural
		archaeological and
		spiritually important
	Local	properties, and sites and
Social	communities	heritage
		Criteria on interpretive
	Local	materials and behaviour
Social	communities	guidelines
		Criteria on business
Management and	Economic	operations economic
Ethics	Viability	viability: general principle
Management and	Economic	
Ethics	Viability	Criteria on fair competition
Management and	Economic	Criteria on production
Ethics	Viability	efficiency / productivity
Management and	Economic	Criteria on diversification
Ethics	Viability	of business operations
		Criteria on long term
		sustainability management
Management and	Economic	plan / continuous
Ethics	viability	Improvement
Managamant	Feenemie	criteria on administration
Iviariagement and	LCONOMIC	and management /
ETHICS	viability	Critoria on Environment
		and Social (E&S)
Management and	Sustainability	Management Systems
Fthics	Management	general principles
	management	Berrer di britterbies



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		Criteria on respect of the
		natural or cultural heritage
		surroundings in siting,
		design, impact
Management and	Sustainability	assessment, and land
Ethics	Management	rights and acquisition
		Criteria on use of locally
		appropriate principles of
		sustainable construction
Management and	Sustainability	and maintenance of
Ethics	Management	existing scenic sites
	U	Criteria on emergency
		response plans or
Management and	Sustainability	strategies to climate
Ethics	Management	related hazards
	0	
Management and	Sustainability	Criteria on environmentallv
Ethics	Management,	friendly purchasing policy
	Ū	
		Criteria on staff training on
		sustainability issues
		(environment, social,
Management and	Sustainability	economic, guality, culture.
Ethics	Management	health and safety)
	0	Criteria on stakeholder
		analysis and engagement
Management and	Sustainability	planning in E&S
Ethics	Management	management systems
		Criteria on assessment of
Management and	Sustainability	environmental risks and
Ethics	Management	impacts
		Criteria on assessment of
Management and	Sustainability	risks and impacts on water
Ethics	Management	usage
		Criteria on assessment of
		risks and impacts on water
		levels of water resources
Management and	Sustainability	used (surface and/or
Ethics	, Management	ground water)



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		Criteria on assessment of
		risks and impacts on water
		quality of water resources
Management and	Sustainability	used (surface and/or
Ethics	Management	ground water)
		Criteria on assessment of
Management and	Sustainability	risks and impacts on soil
Ethics	Management	resources condition
		Criteria on assessment of
		risks and impacts on
		biodiversity in (as well as
Management and	Sustainability	outside) management or
Ethics	Management	production unit
		Criteria on environment
		and social risks mitigation
Management and	Sustainability	and performance
Ethics	Management	improvement
		Criteria on organizational
		capacity for continuous
		improvement of
		environmental and social
		(E&S) management (e.g.
Management and	Sustainability	through Monitoring and
Ethics	Management	Evaluation)
		Cuitania an una aduma ta
		Criteria on procedures to
		monitor and measure
Management and	Custo in a bility	effectiveness of E&S
Management and	Sustainability	management systems (e.g.
Ethics	Management	social impact assessment)
		Criteria on reporting on
		and making publicly
		available E&S management
Managamant	Custoin a bility	systems (e.g. annual social
Ivianagement and	Sustainability	and environmental
ETHICS	ivianagement	reports)



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		Criteria for establishing
		available the management
Management and	Sustainability	unit Internal Control
Ethics	Management	System
		Criteria on establishing and
Management and	Sustainability	the management unit CSP
Ethics	Management	
		I 1
		Criteria on provision of
Management and	Sustainability	access for persons or
Ethics	Management	workers with special needs
Managament	Sustainability	Other criteria relating to
Fthics	Management	administration and
Management and	Supply Chain	Criteria on market data
Ethics	Responsibilities	and analysis
Management and	Supply Chain	Criteria on supply chain
Ethics	Responsibilities	stakeholders mapping
Management and	Supply Chain	Criteria on access to
Ethics	Responsibilities	financial services
Managamantand	Sumply Chain	Criteria on guarantee of
Fthics	Responsibilities	certified product
Management and	Supply Chain	Criteria on minimum price
Ethics	Responsibilities	guarantees
Management and	Supply Chain	Criteria on Living Income
Ethics	Responsibilities	Differential
Management and	Supply Chain	Criteria for setting-up
Ethics	Responsibilities	contracts with traders
		Criteria for inclusion of
Management and	Supply Chain	voice in sustainability
Ethics	Responsibilities	strategy
		Criteria for supply chain
Management and	Supply Chain	responsibility (beyond
Ethics	Responsibilities	primary production)



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Management and	Supply Chain	Criteria for advance
Ethics	Responsibilities	payments requests
		Criteria on distribution
Management and	Supply Chain	networks and access to
Ethics	Responsibilities	markets / buyers
		Criteria on lending
Management and	Supply Chain	practices promoting local
Ethics	Responsibilities	entities
		Criteria on access and
		selection of inputs and
Management and	Supply Chain	varieties (traditional versus
Ethics	Responsibilities	improved/engineered)
		Criteria on traceability of
Management and	Supply Chain	inputs / varieties and
Ethics	Responsibilities	records of materials used
Management and	Supply Chain	Criteria on access to
Ethics	Responsibilities	technology and innovation
		Criteria on infrastructure
Management and	Supply Chain	(transport, storage, testing
Ethics	Responsibilities	laboratories)
		Criteria on (responsible)
		intensification / expansion
Management and	Supply Chain	of cultivation or
Ethics	Responsibilities	infrastructures
		Criteria on using
		independent expertise for
		assessing social and
		environmental impacts
		prior to significant
		intensification or
Management and	Supply Chain	expansion of cultivation or
Ethics	Responsibilities	infrastructure
		Criteria on monitoring /
Management and	Supply Chain	measure of customer /
Ethics	Responsibilities	client satisfaction



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Management and EthicsSupply Chain ResponsibilitiesCriteria on policies encouraging clients, st and suppliers to consid sustainability issues (reduce GHG emissions waste, water use) Criteria on fair marketi based on factual and EthicsManagement and EthicsSupply Chain ResponsibilitiesCriteria on fair marketi based on factual and organization and management (for exam coperatives)Management and EthicsSupply Chain ResponsibilitiesCriteria on subcontract (disclosure of, prior approval, auditor's acc to)Management and EthicsSupply Chain ResponsibilitiesCriteria for local micro businesses/incubation, Criteria on setting up specific delivery times f supply Chain ResponsibilitiesManagement and EthicsSupply Chain ResponsibilitiesCriteria on compliance entitiesManagement and EthicsSupply Chain ResponsibilitiesCriteria on compliance output for approval, auditor's acc coperatives)Management and EthicsSupply Chain ResponsibilitiesCriteria on setting up specific delivery times f suppliers and related possible sanctions for la deliveryManagement and EthicsEthicsCriteria on compliance entitiesManagement and EthicsEthicsInternational Conventio Criteria on compliance national and regional environmental laws and environmental laws an			
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Criteria on explicit polic Management and set of criteria addressir	Ethics	Ethics	regulations
Criteria on explicit polic Management and set of criteria addressir			
Management and set of criteria addressir			Criteria on explicit policy or
-	Management and		set of criteria addressing
Ethics Ethics cultural and religion rig	Ethics	Ethics	cultural and religion rights



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		Criteria en el·liertien te
		Criteria on obligation to
		comply with relevant local,
		regional and national laws
		and regulations (including
		legal land tenure, title,
		having legal rights to use
ivianagement and	E .1.1	the production or
Ethics	Ethics	management unit)
		Critoria on compliance
		with least sering and
Managamentand		with local zoning and
Ivianagement and	Table .	protected or heritage area
Ethics	Ethics	regulations and laws
Ivianagement and	Table .	Ethics: general policy or set
Ethics	Ethics	Gritaria en acementian (
Ivianagement and	Table in a	Criteria on corruption /
Ethics	Ethics	bribery prevention
		Criteria on anti-bribery -
ivianagement and	E .1.1	Procedures and risk-
Ethics	Ethics	assessment
Management and	E .1.1	Criteria on anti-bribery -
Ethics	Ethics	Political contributions
		Criteria on anti-bribery -
Management and		Charitable contributions
Ethics	Ethics	and sponsorships
Management and		Criteria on anti-bribery -
Ethics	Ethics	Facilitation payments
		Criteria on anti-bribery -
Management and		Gifts, hospitality and
Ethics	Ethics	expenses
		Criteria on anti-bribery -
		Due-diligence assessment
		of business partners, incl.
Management and		subsidiaries and
Ethics	Ethics	contractors



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		Criteria on anti-brib
Management and		Staff/workers awareness,
Ethics	Ethics	training and support
		Criteria on anti-bribery -
Management and		Internal controls, records
Ethics	Ethics	keeping, M&E
		Criteria on anti-bribery -
Management and		External reporting and
Ethics	Ethics	communication
		Criteria on anti-bribery -
Management and		Mitigation and corrective
Ethics	Ethics	actions
		Criteria on transparency
		across types of
		information obtained
		during audit (discrepancies
Management and		between the interviews
Ethics	Ethics	and types of records)
		Criteria on audit access:
		general policy (auditor's
		treedom of access to
Management and		tacility grounds, workers,
Ethics	Ethics	production areas)
		Criteria related to denial of
		audit access (auditor
		prevented from fulfilling
Management and		tull scope audit
Ethics	Ethics	requirements)
		Criteria on monitoring /
		following-up on
Management and	E (1)	bribery/corruption
Ethics	Ethics	allegations
		Cuitoria an recorda los suis -
Managementand		practices (allegations /
Ivianagement and	Ethics	(historical finas)
ETHICS	ETHICS	/nistorical fines)



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		Criteria relating to
		verification of business
Management and	Ethica	license and legality of
Ethics	Ethics	Critoria relating to
		intellectual property or
Management and		sustemar information
Ftbicc	Ethics	protoction
Ethics	Product /	protection
	sonvice quality	Quality policy: general
Quality	management	requirements
Quality	management	requirements
	Product /	Criteria on quality:
	service quality	compliance to national and
Quality	management	international legislation
Quanty	Product /	Criteria on quality: risk
	service quality	assessment and hazard
Quality	management	control procedures
Quanty	Product /	Criteria on quality:
	service quality	documentation and
Quality	management	monitoring procedures
Quanty	Product /	monitoring procedures
	service quality	Criteria on quality:
Quality	management	technical specifications
Quanty	Product /	Criteria on product safety
	service quality	specifications (excl. food
Quality	management	safety)
Quality	Product /	Jurceyj
	service quality	Criteria on testing quality
Quality	management	of inputs to production
Quality	Product /	or inputs to production
	service quality	Criteria on testing quality
Quality	management	of semi-final products
quality	Product /	or seril find products
	service quality	Criteria related to testing
Quality	management	quality of final products
		, er mar preadete
	Product /	Criteria related to energy
	service quality	efficiency of final product



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	Product /	Criteria on quality of
	service quality	products packaging and
Quality	management	transportation
- /	0	
		Criteria on quality of
		products storage facilities
	Product /	(warehouses, containers
	service quality	etc) - excl. Food products
Quality	management	specific criteria
Quality	management	specific criteria
		Critoria on Quality
	Droduct /	Management System
	Product /	Quality manual available to
Quality	service quality	quality manual available to
Quality	management	Starr/Workers
		Criteria on Quality
	Decision /	Management System:
	Product /	Control process
	service quality	established and
Quality	management	documented
		Criteria on Quality
	Product /	Management System:
	service quality	Procedures established
Quality	management	and monitored
		Criteria on Quality
	Product /	Management System:
	service quality	Customer focus
Quality	management	performance indicators
		Criteria on Quality
	Product /	Management System:
	service quality	Complaint management
Quality	management	system implemented
		Criteria on Quality
	Product /	Management System:
	service quality	Complaints records
Quality	management	keeping
-		Criteria on Quality
	Product /	Management System:
	service quality	Control process periodic
Quality	management	review and assessment



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		Criteria on Quality
		Management: Internal
	Product /	audit / self-assessment
	service quality	system established and
Quality	management	monitored
		Criteria on Quality
	Product /	Management System:
	service quality	Incidences monitoring and
Quality	management	records keeping
		Criteria on Quality
		Management System:
	Product /	Corrective actions
	service quality	implemented and
Quality	management	aocumented
	Manufasting	Criteria en Oscelito
	Manufactured	Criteria on Quality
	products	Ivianagement System:
	quality	and suppliers' clearance
	environmental	and suppliers clearance
Quality	specifications	monitored
Quality	Manufactured	monitoreu
	products	
	quality	
	technical and	
	environmental	Criteria on the quality of
Quality	specifications	textiles
	Manufactured	
	products	
	quality	
	technical and	
	environmental	Criteria on the production
Quality	specifications	of natural fibres
	Manufactured	
	products	
	quality	
	technical and	
	environmental	Criteria on the production
Quality	specifications	of synthetic fibres



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	Manufactured	
	products	
	quality	
	technical and	
	environmental	
Quality	specifications	Criteria on microplastic
quancy	Manufactured	enteria on micropiastic
	products	
	quality	
	tochnical and	
	technical and	
0 10	environmental	Criteria on material use on
Quality	specifications	touchable surfaces
	Manufactured	
	products	
	quality	
	technical and	
	environmental	Criteria on the suitability of
Quality	specifications	use
	Manufactured	
	products	
	quality	
	technical and	Criteria on environmental
	environmental	management instruments
Quality	specifications	like EMAS or ISO 14001
	Manufactured	
	products	
	quality	Criteria used to assess final
	technical and	product potential for re-
	environmental	use and recycling of non-
Quality	specifications	food products
Quality	Manufactured	roou products
	maduate	
	products	
	quality	
	technical and	Criteria on the use of
	environmental	recycled material in the
Quality	specifications	packaging



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	Manufactured	
	products	
	quality	
	technical and	Criteria on the use of
	environmental	postconsumer recycled
Quality	specifications	content in the product
	Manufactured	
	products	
	quality	
	technical and	Criteria related to the
	environmental	recyclability of plastics
Quality	specifications	used
	Manufactured	
	products	
	quality	
	technical and	
	environmental	Criteria on the usage of
Quality	specifications	recycled fibres
	Manufactured	
	products	
	quality	
	technical and	Criteria on the quality /
	environmental	durability of specific
Quality	specifications	components
	Manufactured	Criteria on Quality
	products	Management System:
	quality	defined, controlled and
	technical and	monitored technical
	environmental	processes for non-food
Quality	specifications	manufactured products
	Manufactured	Criteria on Quality
	products	Management System:
	quality	production site
	technical and	specifications established
o	environmental	and monitored through
Quality	specifications	inspections



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		Criteria on Quality
		Management System:
	Manufactured	waste management
	products	system established and
	quality	monitored for
	quality	
	technical and	manufacturing non-food
	environmental	products (volume, toxicity,
Quality	specifications	discharge)
		Criteria on Quality
		Management System:
		water usage management
	Manufactured	system established and
	products	monitored for
	quality	manufacturing of non-food
	tochnical and	nraducts (volume quality
	technicaranu	products (volume, quality,
- II.	environmental	use - re-use and recycling,
Quality	specifications	wastewater discharge)
		Criteria on Quality
		Management System:
		chemicals usage
		management system
		established and monitored
	Manufactured	for manufacturing of non-
	products	food products (volume
	quality	quality prohibited
	technical and	substances storage and
	cectificat and	substances, storage and
o	environmental	nazardous waste
Quality	specifications	discharge)
	Manufactured	
	products	Criteria on Quality
	quality	Management System: risk
	technical and	assessment for
	environmental	contamination of non-food
Quality	specifications	products



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	Manufactured	
	products	
	quality	Criteria on non-food
	technical and	production - Traceability
	environmental s	system established and
Quality	specifications r	monitored
	Manufactured	
	products (Criteria on non-food
	quality	production - Traceability
	technical and r	records maintained
	environmental t	through entire chain of
Quality	specifications	production
	Manufactured	
	products	Criteria on non-food
	quality	production - labelling
	technical and	system of all inputs
	environmental t	through entire production
Ouality	specifications of	chain
	Manufactured	
	products	
	quality	Criteria on non-food
	technical and	production - Product recall
	environmental	policy established, tested
Quality	specifications	and monitored
	Manufactured (Criteria on non-food
	products	production - Identity
	quality	preservation model
	technical and	established and
	environmental	monitored: modus
Quality	specifications	nomerandi
Quality	Manufactured	operation
	producto	Critoria on non food
	quality	production Sogrogetion
	quality f	production - Segregation
	technical and r	model established and
o	environmental r	monitored: modus
Quality	specifications of	operandi



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	Manufactured	
	products	Criteria on non-food
	quality	production - Mass balance
	technical and	model established and
	environmental	monitored: modus
Quality	specifications	operandi
	Manufactured	
	products	
	quality	
	technical and	Criteria non-food
	environmental	production: workers / staff
Quality	specifications	skills requirements
	Manufactured	
	products	
	quality	Critoria non food
	cecnnical and	production: Workers /
Quality	environmental	stoff training programs
Quality	Manufactured	starr training programs
	products	
	quality	
	technical and	Criteria non-food
	environmental	production: Workers /
Quality	specifications	staff protective clothing
	Food/feed	Criteria on definition of
	management	scope (products.
Quality	systems	operations)
- /	,	Criteria on determination
	Food/feed	of processes, their
	management	interactions and critical
Quality	systems	elements
		Criteria on determination
	Food/feed	of criteria and methods to
	management	ensure effective operation
Quality	systems	and control of the risks
	Food/feed	Criteria on establishment
	management	and implementation of
Quality	systems	Prerequisite Programme



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	Food/feed	Criteria on establishment
	management	and implementation of
Quality	systems	HACCP plan
		Criteria on availability of
		resources and access to
	Food/feed	information to support
	management	correct operation and
Quality	systems	control
		Compliance to relevant
	Food/feed	legal national and
	management	international food/feed
Quality	systems	safety requirements
		Communication within the
	Food/feed	organisation and
	management	upstream/downstream in
Quality	systems	the chain
	Food/feed	Criteria on raw material,
	management	intermediate & final
Quality	systems	products specifications
		Criteria on specification of
		legal requirements related
	Food/feed	to food/feed safety
	management	(related to products and
Quality	systems	processes)
		Criteria on specifications of
	Food/feed	exclusions (products,
	management	operations, locations,
Quality	systems	processes, etc.)
	Food/feed	Criteria on specification of
	management	outsourced activities
Quality	systems	covered under the scope
		Criteria on documentation
	Food/feed	of the policy and related
	management	food/feed safety
Quality	systems	objectives



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		Criteria on documentation
	Food/feed	of the required procedures
	management	and instructions on
Quality	systems	food/feed safety
		Criteria on other
		documents needed to
		ensure effective operation
	Food/feed	of food/feed Management
	management	System (e.g. Training
Quality	systems	records)
	Food/feed	Criteria on structure of the
	management	controlled documentation
Quality	systems	system
		•
		Criteria on procedure to
	Food/feed	draft, approve, issue,
	management	review, update, implement
Quality	systems	and control the documents
		Criteria on procedure to
		store data and records
		safely (electronic or
		papers) related to
	Food/feed	traceability, monitoring,
	management	manufacturing,
Quality	systems	complaints, etc.
		Criteria on communication
		policy towards workers
	Food/feed	regarding the importance
	management	of food/feed safety
Quality	systems	assurance
		Criteria on appointment of
		Food/feed Safety Manager
	Food/feed	in charge of implementing
	management	food/feed safety
Quality	systems	management system



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		Criteria on definition of a
		clear food/feed safety
		statement as regards
		company's commitment to
		compliance with legal,
	Food/feed	market and customers'
	management	requirements and means
Quality	systems	to achieve these
	Food/feed	Criteria on operation of an
	management	effective food/feed safety
Quality	systems	management system
		Criteria on organigram and
		job descriptions,
	Food/feed	addressing responsibilities
	management	and authorities regarding
Quality	systems	food/feed safety assurance
,	-,	Criteria on establishment
	Food/feed	of multidisciplinary HACCP
	management	team with defined
Quality	systems	competences
quanty	Food/feed	Criteria on annointment
	management	and training of HACCP
Quality	systems	team leader
Quality	Food/feed	
	management	Critoria on procedure for
Quality	systems	ovtornal communication
Quality	systems	Critoria on Food/Food
		Safaty Management
		Safety Management
		(monitoring customer
		(monitoring, customer
		Satisfaction, HACCP,
		Audits, supplier
		evaluation) - Identification
	Food/feed	or improvements and
-	management	Improvement
Quality	systems	implementation action



SSO HARMONITOR

	Food/feed	
	management	Criteria on procedure for
Quality	systems	managing complaints
		Criteria on procedure for
	Food/feed	reviewing complaints to
	management	establish preventive or
Quality	systems	corrective actions
	Food/feed	Criteria on implementation
	management	of a complete internal
Quality	systems	audit programme
	Food/feed	
	management	Criteria on qualifications
Quality	systems	for internal auditors
	Food/feed	
	management	Criteria on planning and
Quality	systems	frequency of audits
		Criteria on established and
	Food/feed	documented training and
	management	education about food/feed
Quality	systems	safety management
	Food/feed	
	management	Criteria on facilities for
Quality	systems	personnel hygiene
	Food/feed	Criteria on prohibition to
	management	eat, drink and smoke in
Quality	systems	production/storage areas
	Food/feed	
	management	Criteria on protective
Quality	systems	clothing
	Food/feed	
	management	Criteria on medical
Quality	systems	screening



MARMONITOR

		Criteria on design,
		construction and
		maintenance of sites fit for
		safe food/feed production
	Food/feed	(materials, minimisation of
	management	premise bound carry-over,
Quality	systems	etc.
•		Criteria on site location /
	Food/feed	clear identification of
	management	buildings, production and
Quality	systems	storage areas
-		Criteria on facilities for
	Food/feed	eating and drinking
	management	separated from production
Quality	systems	areas
		Criteria on controlled
		access to the site,
	Food/feed	including for visitors, with
	management	clearly communicated
Quality	systems	hygiene instructions
		Criteria on implementation
	Food/feed	of protective measures
	management	against sabotage,
Quality	systems	vandalism or terrorism
		Criteria on assuring
		enough daylight or
	Food/feed	artificial light to guarantee
	management	safe production of
Quality	systems	food/feed
		Criteria on storage
	Food/feed	conditions, hygiene
	management	requirements and
Quality	systems	verification processes
		Criteria on storage of
		chemicals including
	Food/feed	storage facilities,
	management	accessibility and handling
Quality	systems	by personnel



SSO HARMONITOR

	Food/feed	Criteria on water supply
	management	volume, quality and safety
Quality	systems	assured
		Criteria on suitability of
		processing aid used during
	Food/feed	food/feed production for
	management	food/feed safety
Quality	systems	documented
	Food/feed	Criteria on suitability of
	management	packaging materials for
Quality	systems	food/feed safety
		Criteria on definition and
		documented
	Food/feed	implementation of a
	management	proper and complete
Quality	systems	maintenance programme
		Criteria on definition and
		documented
		implementation of a
		proper and complete
	Food/feed	cleaning programme for all
	management	sites, buildings, areas and
Quality	systems	equipment
		Criteria on food
		harvesting/processing
		utensils cleaned,
	Food/feed	disinfected, sanitized,
	management	maintained and protected
Quality	systems	from contamination
		Criteria on suitability and
	Food/feed	lawful use of cleaning
	management	and/or sanitising agents
Quality	systems	for food/feed safety



SSO HARMONITOR

		Criteria on definition and
		documented
		implementation of a
	Food/feed	proper and complete pest
	management	control programme for all
Quality	systems	sites, buildings and areas
	Food/feed	Criteria on qualification of
	management	internal and external
Quality	systems	people assured
		Criteria on waste
	Food/feed	management system
	management	(volume, toxicity,
Quality	systems	recycling, discharge)
	, Food/feed	Criteria on waste water
	management	drainage, discharge, re-
Quality	systems	using, recycling processes
	Food/feed	Criteria on review and
	management	assessment of all suppliers.
Quality	systems	contracts and services
	Food/feed	Criteria on procedure to
	management	approve the ingredient -
Quality	systems	supplier combination
	Food/feed	
	management	Criteria on suppliers'
Quality	systems	evaluation
		Criteria on establishing
		flowcharts of the whole
		production including
	Food/feed	reception of goods,
	management	production, packaging,
Quality	systems	storage and transport
-		Criteria on establishment
	Food/feed	and implementation of
	management	procedures to plan and
Quality	systems	schedule production



SSO HARMONITOR

	Food/feed	
	management	Criteria on product
Quality	systems	transportation procedures
		Criteria on assurance that
		produced products meet
	Food/feed	the specified Criteria
	management	including the food/feed
Quality	systems	safety schemes
		Criteria on assurance that
		potential risks related to
	Food/feed	drying, especially direct
a !!!	management	drying, are identified and
Quality	systems	controlled
		Criteria on assurance that
		defined risks related to
		harvesting, handling,
	Food /food	processing, transportation
	Food/Teed	and packaging of
Quality	management	and controlled
Quality	systems	Criteria on baryested /
	Food/feed	semi-processed products
	management	nackaging protection
Quality	systems	against contamination
quality	systems	Criteria on harvested /
	Food/feed	semi-processed / final
	management	products treatment before
Quality	systems	retail
,	,	
		Criteria on food
	Food/feed	production contamination
	management	risks - Glass and wood
Quality	systems	foreign bodies inspection



SSO HARMONITOR

		Criteria on food
		production contamination
	Food/feed	risks - water
Quality	management	contamination mitigation
Quality	systems	Criteria on food
		production contamination
	Food/feed	risks - foreign body control
	management	& detector monitoring
Quality	systems	procedures
		•
		Criteria on assurance that
		validated procedures
		including measurements
		are in place to control
		unintended
	Food/feed	(cross)contamination of
	management	products that affect the
Quality	systems	safety of the feed.
	Food/teed	
Quality	management	Criteria on food products
Quality	systems	Criteria en general policy
	management	principlos about irrediction
Quality	systems	of food
Quality	systems	011000
	Food/feed	Criteria on general
	management	principle about chilling,
Quality	systems	storage and transportation
-	Food/feed	
	management	Criteria on GMO handling
Quality	systems	procedures
	Food/feed	
	management	Criteria on allergen
Quality	systems	handling procedures
	Food/feed	
0 10	management	Criteria on identity
Quality	systems	preservation model



MARMONITOR

	Food/feed	
	management	Criteria on segregation
Quality	systems	model
	Food/feed	
	management	Criteria on Mass balance
Quality	systems	model
	Food/feed	
	management	Procedure for outsourced
Quality	systems	activities
		Criteria on food
	Food/feed	production process &
	management	control - Nutritional
Quality	systems	requirements
		Criteria on establishing a
		procedure and implement
		measurements to define if
	Food/feed	and how the rework shall
	management	be used before the rework
Quality	systems	is entering the site
	Food/feed	
	management	Criteria on record usage of
Quality	systems	rework
	Food/feed	
	management	Procedure for outsourced
Quality	systems	activities
		Criteria on establishment
		of procedures to ensure
		that formulation of
	Food/feed	products does not
	management	introduce any food/feed
Quality	systems	safety risks
		Criteria on labelling of
	Food/feed	products in compliance
	management	with applicable legal
Quality	systems	requirements



SSO HARMONITOR

	Food/feed	Criteria on traceability
	management	system established and
Quality	systems	monitored
		Criteria on recording
	Food/feed	relevant information
	management	related to received
Quality	systems	products and suppliers
		Criteria on recording
	Food/feed	relevant information
	management	related to delivered
Quality	systems	products and customers
	Food/feed	Criteria on implementing
	management	an internal traceability
Quality	systems	system
		Criteria on provision of
	Food/feed	relevant information about
	management	products and their delivery
Quality	systems	within a certain time limit
	Food/feed	Criteria on product recall
	management	policy established, tested,
Quality	systems	monitored and evaluated
	Food/feed	Criteria on food/feed
	management	safety incidents records
Quality	systems	keeping
	Food/feed	
	management	Criteria on notification of
Quality	systems	clients
	Food/feed	
	management	Criteria on notification of
Quality	systems	Competent Authority
	Food/feed	
	management	Criteria on notification of
Quality	systems	certification body
	Food/feed	
	management	Criteria on notification of
Quality	systems	scheme manager



SSO HARMONITOR

	Food/feed	
	management	Criteria on recall
Quality	systems	simulation
		Criteria on food/feed
		safety incidents
	Food/feed	management procedure
	management	established. tested.
Quality	systems	monitored and evaluated
,	Food/feed	Criteria on food/feed
	management	safety incidents records
Quality	systems	keening
Quanty	3y3terris	Criteria on procedure for
	Food/feed	management and
	roou/reeu	
Quality	management	correction of non-
Quality	systems	conformities
	Food/feed	
	management	Criteria on conducting a
Quality	systems	hazard analysis
	Food/feed	
	management	Criteria on identification of
Quality	systems	all potential hazards
	Food/feed	
	management	Criteria on determination
Quality	systems	of CCPs
	Food/feed	
	management	Criteria on establishment
Quality	systems	of critical limits
	Food/feed	
	management	Criteria on monitoring of
Quality	systems	CCP's
	Food/feed	Criteria on establishment
	management	of monitoring procedures
Quality	systems	for CCPs
- Louine j	Food/feed	Criteria on assurance that
	management	every other hazard is
Quality	systems	adequately monitored
Quanty	Food/feed	adequately monitored
	management	Critoria on ostablishmont
Quality	management	of corrective actions
Quality	systems	of corrective actions



SSO HARMONITOR

	Food/feed	Criteria on verification of
	management	the HACCP plan including
Quality	systems	frequency
		Criteria on records of data
	Food/feed	to demonstrate
	management	effectiveness in controlling
Quality	systems	the hazards
	Food/feed	Criteria on assessment
	management	whether and how the
Quality	systems	HACCP plan needs update
	-,	Criteria on definition of all
	Food/feed	monitoring activities to
	management	demonstrate control the
Quality	systems	CCP's
quanty	Food/feed	
	management	Criteria on record of
Quality	systems	monitoring results
Quanty	Food/feed	monitoring results
	management	Criteria on monitoring of
Quality	systems	incoming products
Quanty	Ecod/food	Criteria on guarantine /
	management	release procedure based
Quality	systems	on rick assessment
Quality	Food/feed	OILLISK GSSESSILLEITE
	management	
Quality	systems	Criteria on sampling
Quality	393101113	Criteria on sampling
		nrocedures for incoming
	Food/feed	goods finished products
	management	and products during
Quality	systems	nroduction
caunty	Systems	Criteria on food
	Food/feed	production process &
	management	control - Product analysis
Quality	systems	and testing
Quality	systems	Critoria on food
	Food/feed	production process &
	management	control - Quantity control
Quality	systems	procedures
Quality	Systems	procedures



	Food/feed	
	management	Criteria on laboratory and
Quality	systems	methods for analysis
	Food/feed	
	management	Criteria on requirements
Quality	systems	for laboratories
	Food/feed	
	management	Criteria on measuring
Quality	systems	devices on site
	Food/feed	Criteria on maintenance
	management	and calibration of
Quality	systems	measuring equipment
		Documentation of the
	Food/feed	policy and related
	management	food/feed safety
Quality	systems	objectives

Green fields indicate that the sustainability requirement is addressed by the CSL, Orange fields indicate that the requirement is not addressed.

¹ Different standards available under ASC; in this selection: ASC-MSC Seaweed (Algae)

² Different standards available under Fairtrade International; in this selection: Fairtrade International Trader Standard

³ Different standards available under GlobalG.A.P.; in this selection: GlobalG.A.P. crops certification

⁴ Different standards available under GSA; in this selection: GSA - Best Aquaculture Practices

⁵ Different standards available under Pacific Ocean Standard; in this selection: Pacific Organic Standard Aquaculture

⁶ Different standards available under Textile Exchange, in this selection: Textile Exchange Organic Content Standard, Global Recycled Standard, and Recycled Claim Standard





ANNEX II INTERNAL SURVEY FOR CSL SELECTION

The following table summarises the results to the internal questionnaire, supporting the CSL selection process.

Question	Answers
	sustainability requirements of CSLs
	verification procedures
	relevance for selected value chains
	risk assessment approaches
Q1. Which aspects regarding the CSLs are of specific interest for your analysis/work in	rules for accepting upstream certificates from other CSLs
HARMONITOR?	internal revision process, management of
	external feedback received on their performance
	public perception
	stakeholder integration
	economic KPIs
	EU versus non-EU; start from Europe and then
	enlarge the scope
Q2. Which geographical scope is important for	CSLs that work with global value chains feeding
the CSL selection?	EU market
	medium/very importance – at the very end the
	CSL shall cover all relevant criteria in a global
	ionnal diversity of feedstocks, but flexible for which
	ones we choose
	CSLs that work with global value chains feeding
Q3. Which feedstock focus is important for the	EU market
CSL selection?	feedstocks with high
	environmental/social/economic relevance
	we need to cover all relevant large feedstock
	categories
	exclude bioenergy?
	important to represent the diversity of the BBE.
Q4. Main markets of activity of the CSLs?	textiles, plastics/chemical industry are
,	interesting
	at the very end all bio-based feedstocks shall be
	certified on the same level
	look at different ambition levels.





Q5. Ambition of the CSL as criteria for	our CSL selection ideally would include both	
selection?	types	
	important to understand demand and perception	
06 Shall the market relevance of the CSI's he a	as well as market drivers (what can work and	
selection criterion?	what not)	
	not important regarding analysis of sustainability	
	requirements, etc.	
	scope of CSL: not only the geographical scope	
	(also business sector focus, etc.)	
	environmental relevance (or social/economic	
	relevance), relevant also for value chain	
Q7. Other important aspects?	selection and the assessment of CSLs	
	high Volume Feedstocks	
	data Availability (depth & breadth)	
	only CSLs that explicitly work with mandatory	
	independent third-party verification	





ANNEX III UNCERTAINTIES CONCERNING VALUE CHAINS COVERAGE BY CSLS

CSL	Uncertainty	Reference
Alliance for Water Stewardship (AWS)	 No data on feedstocks or products in the scheme documents or on the website. Data are based on the ITC Standards Map and estimates derived from it. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(AWS 2022; International Trade Centre 2021)
Aquaculture Stewardship Council (ASC)	 Data are based on ASC-MSC Seaweed (Algae), ASC Pangasius, Salmon, Shrimps, and Tilapia. Data are also based on the ITC Standards Map. 	(ASC 2023; International Trade Centre 2021)
Better Biomass	Some feedstock (e.g. wood) and products (e.g. wood products) are derived from the list of certificates holders', others are from scheme documents (e.g. UCO, wheat, sugar beet).	(Better Biomass 2023)
Better Cotton	Data are also based on the ITC Standards Map.	(Better Cotton 2023; International Trade Centre 2021)
Bioplastic Feedstock Alliance (BFA)		(BFA 2023)
Bonsucro	Data are also based on the ITC Standards Map.	(Bonsucro 2023; International Trade Centre 2021) <u>https://bonsucro.com/tools-</u> and-resources/
BRCGS Ethical Trade and Responsible Sourcing	 Scheme documents are not freely available and no feedstock or products specified on website. Data are based on the ITC Standards Map and estimates derived from it. Different Bio-based chemicals are not distinguished on ITC Standards Map. We have considered chemicals for all bio-based chemicals. 	(BRCGS 2023; International Trade Centre 2021)
BREEAM	As BREEAM is a certification system for the assessment and verification of the entire life cycle of buildings (with standards for e.g. new construction, refurbishment and fit-out or in-use), BREEAM is estimated to be suitable for the certification of building materials.	(BREEAM 2023)





Carbon Trust Product Footprint Certification	 No scheme documents available. No feedstock or products specified on website. Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(The Carbon Trust 2023; International Trade Centre 2021)
Cradle to Cradle Certified	Feedstocks and products are based on list of certified products.	(Cradle to Cradle Products Innovation Institute 2023)
EU Ecolabel - Paper	Data are also based on the ITC Standards Map.	(European Commission 2023b; International Trade Centre 2021)
EU Ecolabel - Textiles	 Data are also based on the ITC Standards Map. Since rayon is a fabric or textile, rayon is considered to be certified with the EU Ecolabel - Textiles. 	(European Commission 2023a; International Trade Centre 2021)
EU organic farming logo	Data are also based on the ITC Standards Map.	(European Commission 2023c; International Trade Centre 2021)
Fairtrade International	 Data are based on the Fairtrade International Trader Scheme. Other schemes, such as the Fairtrade International - Small Producers Organizations, which has a much smaller focus (feedstocks, regions, products), have not been considered. Data are also based on the ITC Standards Map. 	(Fairtrade International 2023a; International Trade Centre 2021)
Fairtrade International Textile Standard	Data are also based on the ITC Standards Map.	(Fairtrade International 2023b; International Trade Centre 2021)
Forest Stewardship Council (FSC)	 Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(FSC 2023; International Trade Centre 2021)
GlobalG.A.P.	 Data are based on GlobalG.A.P. Aquaculture, Crops (Plants), Livestock, and GLOBALG.A.P. Risk Assessment on Social Practice (GRASP). Data are also based on the ITC Standards Map. 	(GlobalG.A.P. 2023; International Trade Centre 2021)
Global Organic	Data are also based on the ITC Standards Map.	(GOTS 2023; International Trade Centre 2021)





Textile		
Standard		
(GOTS)		
Global Reporting Initiative (GRI)	 GRI has developed standards for specific sectors. Feedstocks and products related to these sectors (e.g. forestry and logging, production of pulp and paper) were selected. Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(GRI 2023; International Trade Centre 2021)
Global Seafood Alliance (GSA)	 Data are based on Global Seafood Alliance - Best Aquaculture Practices Data are also based on the ITC Standards Map. 	(GSA 2023; International Trade Centre 2021)
Gold Standard	 No data on feedstocks or products in the scheme documents or on the website. Data are based on the ITC Standards Map and estimates derived from it. 	(Gold Standard 2023; International Trade Centre 2021)
Green Gold Label (GGL)	 GGL certifies biomass (woody agricultural residues and waste wood biomass) and liquid biofuels for bio-based chemicals and other products, as well as for electricity and heat generation. This means that GGL certifies the feedstock for bio-based chemicals, but not the chemicals. 	(GGL 2023)
ISCC EU & ISCC PLUS	Data are also based on the ITC Standards Map.	(ISCC 2023; International Trade Centre 2021)
Marine Stewardship Council (MSC)	Data are also based on the ITC Standards Map.	(MSC 2023; International Trade Centre 2021)
Nature Care Products (NCP) Standard	Data are also based on the ITC Standards Map.	(GfaW 2021; International Trade Centre 2021)
Naturtextil IVN certified BEST	 Data are also based on the ITC Standards Map. Different Bio-based chemicals are not distinguished on ITC Standards Map. We have considered chemicals for all bio- based chemicals. 	(IVN 2018; International Trade Centre 2021)




OK biobased	 All products (partially or completely) made of materials and/or polymers of natural origin are eligible for this certification scheme (except solid, gaseous or liquid fuels). OK biobased was judged for the certification of all chemicals. 	(TÜV Austria Holding AG 2023)
Pacific Organic Standard	 Data are based on Pacific Organic Standard Aquaculture, Crops, and Livestock. The Pacific Organic Standard only certifies feedstocks from Australia and Oceania. In addition to algae, natural materials for packaging (including leaves, fibres, coconut shells, shells, bamboo) are certified where possible, as well as reusable, recycled, recyclable or biodegradable packaging. Data are also based on the ITC Standards Map. 	(PoetCom 2023; International Trade Centre 2021)
PEFC International (Programme for the Endorsement of Forest Certification)	 Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(PEFC 2023; International Trade Centre 2021)
Rainforest Alliance	Data are also based on the ITC Standards Map.	(Rainforest Allianc 2023; International Trade Centre 2021) <u>https://www.rainforest-</u> alliance.org/
Recognised	 Geographical scope for feedstocks certified by Recognised is according to the ITC Standards Map Australia and New Zealand. Data are also based on the ITC Standards Map. Different Bio-based chemicals are not distinguished on ITC Standards Map. We have considered chemicals for all bio-based chemicals. 	(Accord Australasia 2022; International Trade Centre 2021)



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REDcert, REDcert2	 REDcert certifies sustainable agricultural raw materials, e.g. malt barley, sugar beets and oil seeds with focus on Europe and Germany. REDcert2 includes in particular certification of sustainable material flows in the chemical industry. Therefore, we assume that REDcert2 certifies all biobased chemicals. Data are also based on the ITC Standards Map. 	(REDcert GmbH 2023; International Trade Centre 2021)
Round Table on Responsible Soy Association (RTRS)	Data are also based on the ITC Standards Map.	(RTRS 2023; International Trade Centre 2021)
Roundtable on Sustainable Biomaterials (RSB)	 RSB website shows some examples of products that could be certified. RSB certifies every product made from biomass (e.g. crops, wood, waste, etc.). 	(RSB 2023)
Roundtable on Sustainable Palm Oil (RSPO)	Data are also based on the ITC Standards Map.	(RSPO 2023; International Trade Centre 2021)
SAI Platform - Farm Sustainability Assessment FSA	Data are also based on the ITC Standards Map.	(SAI 2023; International Trade Centre 2021)
SGE 21	 Geographical scope of SGE 21 is in Europe on Portugal and Spain, and in South America on Chile, Colombia, and Peru. Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. Different Bio-based chemicals are not distinguished on ITC Standards Map. We have considered chemicals for all bio- based chemicals. 	(Forética 2023; International Trade Centre 2021)

HARMONITOR Deliverable 2.1





Sustainable Agriculture Network (SAN)	Feedstocks and products are derived from examples of projects and SAN's mission on SAN's website.	(SAN 2023)
Sustainable Biomass Program (SBP)	 Wood products certified by SBP are e.g. wood pellets and woodchips, used in industrial, large scale energy production. Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(SBP 2019; International Trade Centre 2021)
Sustainable Forestry Initiative (SFI)	 SFI supports a growing need for products from the forest. Certification of wood products are not specified. 	(SFI 2022)
Textile Exchange	 Data are based on Textile Exchange Global Recycled Standard, Organic Content Standard, Recycled Claim Standard. Data are also based on the ITC Standards Map. 	(Textile Exchange 2023; International Trade Centre 2021)
Together for Sustainability (TfS)	 The chemical sector's global initiative, Together for Sustainability (TfS), can be applied in the chemical industry and beyond. No more information on the website indicating which feedstocks or products are certified. Data are based on the ITC Standards Map and estimates derived from it. Different Bio-based chemicals are not distinguished on ITC Standards Map. We have considered chemicals for all bio- based chemicals. 	(TfS 2023; International Trade Centre 2021)
Verified Carbon Standard (VCS)	 The Verified Carbon Standard website presents the scope of the sectors. Products that belong to these sectors can potentially be certified. Data are also based on the ITC Standards Map. Wood as feedstock or products are not specified on ITC Standards Map. We considered forestry for wood. 	(VCS 2022; International Trade Centre 2021)