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Innovative compact HYbrid electrical/thermal storage systems for low energy BUILDings

Project Acronym:

HYBUILD

Deliverable Report

Deliverable number:

D5.2

Social Life Cycle Assessment of the HYBUILD system

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Lead beneficiary:	UdL
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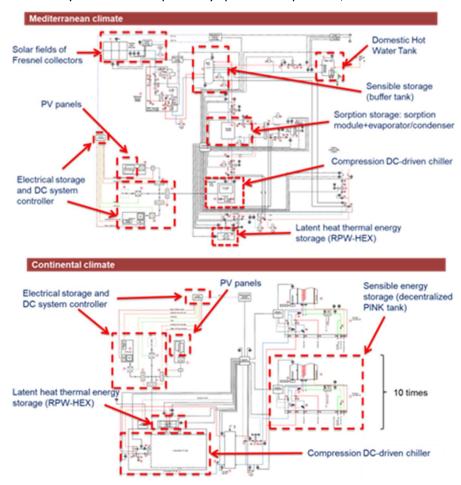
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Publishable executive summary

The EU Horizon 2020-funded project HYBUILD, led by COMSA, is developing two innovative compact hybrid electrical/thermal storage systems for stand-alone and district-connected buildings.

Deliverable D5.2, related to Task 5.3 "Social Life Cycle Assessment", aims at analysing the social aspects of the HYBUILD systems developed within the project for both Mediterranean and Continental climates, in order to evaluate the positive and negative social impacts along their life-cycle. The two systems are composed by specific components, which are shown in Figure 1.



 $Figure\ 1.\ Mediterrane an and\ Continental\ HYBUILD\ systems-identification\ of\ the\ system\ components$

For both the systems, a Social Life Cycle Assessment (S-LCA) was performed according to the UNEP/SETAC Guidelines [1], by considering the same life cycle stages included in the Life Cycle Assessment (D5.1) and Life Cycle Cost Assessment (D5.3) analyses of the HYBUILD project and the single components of the systems.

The assessment starts with the identification of the actors involved in the HYBUILD systems lifecycle, i.e. the components producers, the companies installing the system, the ones involved in the replacement and in the End-of-Life of it or part of it. All of them have been asked to compile a social life cycle assessment questionnaire, firstly identifying the stakeholders considered in the analysis and their related special themes of interests (subcategories). Once all the data have been collected, the methodology developed by Ciroth et al. [5] has been used to evaluate the performance and the social impacts of each company.



The social impacts coming from all the involved companies have been then combined in order to provide a final social life cycle assessment score, for both the Mediterranean and the Continental HYBUILD systems.

From the results, it can be underlined that both the systems can be socially accepted, even if some improvements should be needed. Indeed, the social life cycle impact is equal to 4.06 for the Mediterranean system and to 3.93 for the Continental system, considering a scale ranging from 1 (positive effect) to 6 (very negative effect). Observations are made in the "Conclusions" section, which indicates the hot-spots of the assessment, suggesting how and where to intervene in order to reduce the overall social impacts.

Acronyms and Abbreviations

AKG	AKG Verwaltungsgesellschaft MBH
CNR/ITAE	Consiglio Nazionale delle Ricerche/Istituto di Tecnologie Avanzate per
	l'Energia
COMSA	Comsa S.A.U.
CONT	Continental
CSEM	Centre suisse d'électronique et de microtechnique
DAIK	Daikin Airconditioning Hellas SA
DC	Direct Current
DHW	Domestic Hot Water
EC	European Commission
EoL	End-of-Life
ENG	Engineering – Ingegneria Informatica Spa
EU	European Union
FAHR	Fahrenheit
FRESNEX	Fresnex GmbH
G	Governance
GA	Grant Agreement
HEX	Heat Exchanger
НР	Heat Pump
HR	Human Rights
HS	Health and Safety
IA	Impact Assessment
IC	Impact Category
ILO	International Labour Organisation
IFC	International Finance Corporation
IR	Indigenous Rights
ISO	International Organization for Standardization
LCA	Life Cycle Assessment
LCC	Life Cycle Costing
LCI	Life Cycle Inventory



1450	A				
MED	Mediterranean				
ОСН	Ochsner Wärmepumpen GmbH				
OECD	Organisation for Economic Co-operation and Development				
PA	Performance Assessment				
PCM	Phase Change Material				
PINK	Pink GmbH				
PRP	Performance Reference Point				
PV panel	Photo-Voltaic panel				
RPW-HEX Refrigerant-PCM-Water HEX (latent storage integrated in the refriger					
	cycle of a compression heat pump)				
SER	Socio-Economic Repercussions				
SETAC	Society of Environmental Toxicology and Chemistry				
SLCA	Social Life Cycle Assessment				
STRESS	Sviluppo Tecnologie e Ricerca per l'Edilizia Sismicamente Sicura ed				
	ecoSostenibile				
UDL	Universitat de Lleida				
UNEP	United Nation Environment Program				
WC	Working Condition				
WP	Work Package				



1 Introduction

1.1 Aims and objectives

The EU Horizon 2020-funded project "HYBUILD" is developing two innovative compact hybrid electrical/thermal energy storage systems for stand-alone and district connected buildings.

Deliverable 5.2 "Social Life Cycle Assessment of the HYBUILD system" reports the social assessment methodology and analysis of both the HYBUILD systems, providing, as result, a final S-LCA score describing the system social impacts. It is related to Task 5.3 "Social Life Cycle Assessment", which is a methodology that, in the near future, will support the purchasing choice of people. Indeed, nowadays buyers are not only driven by the cost and the quality of the product, because they are conscious of the effects their choices have on the environment, the local economies and the social and socio-economic effects as well, not only on workers but also on all the communities where production takes place [1].

The present S-LCA study has started from the identification of all the organizations; since it is linked to the behaviour of the enterprises involved in the system life cycle stages. For each of them, generic and specific data has been collected and analysed in order to provide a final score and also to identify social "hot spots" for suggesting overall social improvements and, therefore, for increasing the feasibility of the future HYBUILD commercial product. The assessment is not comparative, given the difficulty to collect the social data from existing organization involved in the life cycle stages of conventional systems.

S-LCA report could be of interest to many manufacturer companies both within the project and external, being a useful resource available for social comparisons and improvements.

1.2 Relations to other activities in the project

The present social life cycle assessment has been performed with the help of all consortium partners involved in the HYBUILD system life cycle. Indeed, the assessment is based on the behaviour of the companies providing a component or performing a process within the system life cycle, with respect to some defined social topics of interest. Therefore, all the necessary inputs for the analysis have been requested through S-LCA questionnaires and social data related to the companies' behaviour have been collected.

The present activity is connected to WP2 "Core components and modules design", where the information of the HYBUILD systems components are provided and to WP4 "Smart control and system integration", where the complete and detailed systems drawings are shown in Deliverable 4.2 "Functional requirements specification" annexes.

Moreover, Task 5.3 is connected to T5.1 "Life-Cycle Assessment (LCA)" and T5.2 "Life Cycle Costing Analysis (LCC)", because the same system boundary has been considered, which includes the manufacturing, the installation, the use, and the end-of-life stages.

1.3 Report structure

The deliverable is structured into the following section:

- In Section 1, an introduction is provided, including the aim and objectives of the deliverable, the relations with other activities within the HYBUILD project, the report structure and the contributions of partners.



- The main focus of the deliverable is reported in Section 2, Section 3 and Section 4, where the social life cycle assessment is developed, firstly explaining the methodology and then applying it to both the systems of the HYBUILD project, including the inventory, the impact assessment, and the interpretation of S-LCA stages.
- Additional considerations are reported in Section 5.
- Conclusions are reported in Section 6, summarizing the activity performed and the main results.
- Finally, the references used in the deliverable and in the analyses are listed.

1.4 Contributions of partners

As said before, all consortium partners involved in the HYBUILD system life cycle have contributed to the Social Life Cycle Assessment. In particular:

- STRESS has led the activity, by providing the questionnaire, collecting the data from partners, contacting one external partner for providing additional missing information, and performing the S-LCA.
- UDL has supported the activity by reviewing the first documents circulating, contacting three external partners for providing additional missing information, and reviewing the assessment
- The following partners have provided the data for the manufacturing stage:
 - CSEM
 - OHSNER
 - AKG
 - FRESNEX
 - ENGINEERING
 - ITAE-CNR
 - FAHRENHEIT
 - DAIKIN
 - PINK
- COMSA has provided the data needed for the installation stage.



2 Social Life Cycle Assessment

A Social and Socio-Economic Life Cycle Assessment (S-LCA) is a social impact assessment methodology that aims at assessing the social and socio-economic aspects of products and their potential positive and negative impacts along their life cycle encompassing extraction and processing of raw materials, manufacturing, distribution, use, re-use, maintenance, recycling, and final disposal [1].

Social life cycle assessment is a relatively new analysis, which, together with the Life Cycle Assessment (LCA) and the Life Cycle Costing (LCC), complements the methodologies for the sustainability assessment of product and services, adding the social to the environmental and economic points of view of the product life cycle. The first indications on how to perform an S-LCA were reported by the "Guidelines for Social Life Cycle Assessment of products" in 2009, developed by UNEP and SETAC [1]. This document provides a map for S-LCA analyses, and it is supported by "The Methodological Sheets for Subcategories in Social Life Cycle Assessment (S-LCA)" [2] document, which helps in the data collection. S-LCA Guidelines framework is in line with the ISO 14040 [3] and 14044 [4] standards for Life Cycle Assessment, following the four steps needed to quantify the environmental/economic/social impacts, being:

- The definition of the objective and the application fields. In this stage of the S-LCA, the
 "stakeholder categories" are defined considering the product under analysis, being a
 cluster of stakeholders that are expected to have shared interests due to their similar
 relationship to the investigated product systems. For each stakeholder category,
 particular themes or areas of interest, which are called "subcategories", are also
 defined.
- 2. The inventory, which involves the collection of characteristic and functional data for the development of the S-LCA analysis.
- 3. The quantification of the social impacts (Impact Assessment IA).
- 4. The interpretation of the results and the identification of social "hot points", being critical points to take in consideration for future social improvements.

Steps 3 and 4 are not included in the S-LCA Guidelines, therefore the impact assessment method for social impacts developed by the GreenDeltaTC [5] was considered.

A new version of the S-LCA Guidelines was released in December 2020 [6]. The main differences among the two methodologies are that the 2009 version does not provide indications on the impact assessment methodology; whilst the 2020 version, which includes an additional stakeholder (children), provides IA methodologies in two different approaches (the Reference Scale Approach, if the aim is to describe a product system with a focus on its social performance, measured with specific data, or social risk, measured with generic, sector/country data; the Impact Pathway Approach, if the aim is to predict the consequences of the product system). In case Reference Scale approach is considered, the data collection should contain: a dataset to create the Reference Scale; another dataset for each Stakeholder Groups and Subcategories identified as relevant for the study; and finally, a dataset to apply the weighting. Therefore, inventory would be strictly dependent on the chosen impact assessment methodology.

Given that the activities of Task 5.3 started in M24 (September 2019) and the data collection in December 2020 was almost complete, it was decided not to modify the approach and the ongoing activities. Moreover, the methodological sheets of 2020 version of the S-LCA Guidelines were released in April 2021; this means that very short time would have been available to adapt the assessment and finalize the analysis.



2.1 S-LCA Methodology

In this section, the methodology used for the Social Life Cycle Assessment of the HYBUILD systems is described, according to the UNEP/SETAC Guidelines [1] and the GreenDeltaTC indications [5].

Firstly, the product under analysis needs to be identified, considering the functional unit and the system boundary. The functional unit represents the unit referring to which the results are given, while the system boundary represents the processes of the product life cycle that are included in the assessment. In order to identify these stages, the EN 15978 [7] is used, which groups the product life cycle stages into modules: A1-A3 modules are referred to the production stage (extraction and production of raw materials, transport to the manufacturing site, manufacturing); A4-A5 modules are referred to the construction/installation (transport to the installation site, installation); B1-B7 modules are referred to the use stage (use, maintenance, repair, replacement, ...); C1-C4 and D modules are referred to the End-of-Life (EoL) stage (deconstruction/disassembly, transport to the waste processing site, waste processing, disposal, reuse/recovery/recycling).

Moreover, for the S-LCA, the identification of the system boundary is also related to the indication of the main group of stakeholders involved in each stage of the life cycle. Indeed, the guidelines identify five stakeholder categories, i.e. workers, local community, society, consumers, and value chain actors, which are shown in Figure 2. An example of identification of the most relevant and significant stakeholders categories for each stage of the life cycle is reported in Figure 3.

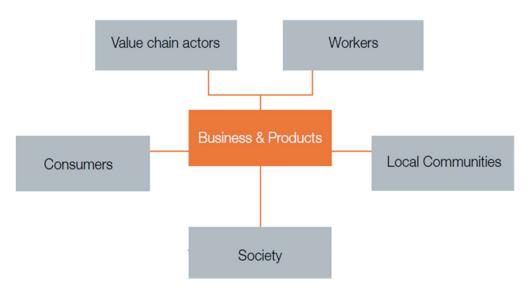


Figure 2. Stakeholders involved in the products life-cycle



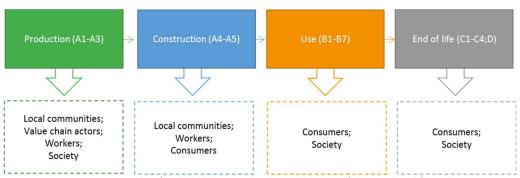


Figure 3. Example of stakeholders involved in each stage of the product life-cycle

For each stakeholder, special themes of interest need to be identified, which are called "subcategories". The S-LCA Guidelines provide the list of subcategories related to the single stakeholder. The list is reported in Figure 4.

Stakeholder	Sub-categories
	Delocalization and migration
	Community engagement
	Cultural Heritage
	Respect of indigeneous rights
Local Community	Local employment
	Access to immaterial resources
	Access to material resources
	Safe and healthy living conditions
	Secure living conditions
	Fair competition
Value Chain Actors	Respect of intellectual property rights
value Chain Actors	Supplier relationships
	Promoting social responsibility
	Health and safety
	Feedback mechanism
Consumers	Consumer privacy
	Transparency
	End of life responsibility
	Freedom of association & collective bargaining
	Child labour
	Fair salary
Workers	Working hours
VVOIKEIS	Forced labour
	Equal opportunities/discrimination
	Health and safety
	Social benefits/social security
	Public commitments to sustainable issues
	Prevention and mitigation of armed conflicts
Society	Contribution to economic development
	Corruption
	Technology development

Figure 4. List of subcategories according to UNEP/SETAC Guidelines [1]

Going more in detail, subcategories are assessed by the use of inventory indicators, depending on data availability and the goal and scope of the study. The list of the indicators and the



description of their status for the considered processes represents the inventory of the S-LCA. Inventory indicators are reported in the S-LCA methodological sheets [2] and an example of indicators related to the "Freedom of Association and Collective Bargaining" subcategory is shown in Figure 5. Indicators, and the related collected data, can be quantitative, semi-quantitative (yes/no or rating scale responses) and qualitative (descriptive text), and are generally collected through questionnaires.

STAKEHOLDER: Worker	Freedom of Assoc	iation and Collective Bargaining	STAKEHOLDER: Worker	Freedom of Assoc	ciation and Collective Bargaining		
lote: These tables contain examy hould not be viewed as extensiv cope. Seneric analysis (Hotspots)	ole indicators meant e lists; appropriate ir	surement and Data Sources to inspire S-LCA case studies. Tables dicators depend on study goal and	Check the availability of collective bargaining agreement and meeting minutes (e.g. Copies of collective bargaining negotiations and agreements are kept on file)	semi-quantitative	Visit to facility Interview and/or questionnaire filled by directors or human resources officer		
			Workers are free to join unions	semi-quantitative	 Regulation 		
Evidence of restriction to Freedom of association and Collective bargaining		of their choosing		Verification of organizations' documents Interview with workers and trade union representatives Interview with NGO and Trade			
organization or factory non respect or support to Freedom of association and Collective bargaining	spect or support to Freedom qualitative		Employee/union representatives are invited to contribute to planning of larger	semi-quantitative	Interview with directors or human resources officer Interview with workers and trade		
GRI: HR5 Operations identified in which the right to exercise freedom of association and collective	Semi- quantitative, qualitative	Organizations GRI Sustainability reports	changes in the company, which will affect the working conditions		union representatives Verification of organizations' documents including sustainabilit reports		
bargaining may be at significant risk, and actions taken to support these rights			GRI LA5 Minimum notice period(s) regarding significant	semi-quantitative	Organizations GRI Sustainability reports		
Specific analysis			operational changes, including whether it is specified in collective agreements				
	Unit of Measurement		Workers have access to a	semi-quantitative	Interview or questionnaire filled by		
Employment is not conditioned by any restrictions on the right to collective bargaining	qualitative/semi- quantitative		neutral, binding, and independent dispute resolution procedure		directors or Human resources offic and workers, Verification of organizations' documents Interview with NGO and Trade Union association		
Presence of unions within the	qualitative/semi-	NGOs reports Regulations Visit to facility	Limitations of the Subcategory	ornational Labors St	andered identify any oral difficulti		
organization is adequately supported (Availability of facilities to Union, Posting of Union notices, time to exercise the representation functions on paid work hours)	quantitative	Interview with directors or human resources officer Interview with workers and trade union representatives NGOs reports	using the following indicators: uni percentage of workers covered by information on context is necessa One critic of the union density ind with freedom of association is bui	on density, frequency collective agreeme yr to use these indicticator: "The use of u It on the implicit assi	ints (GRI LA4). Interpretation, including ators appropriately. into density as a proxy for compliance umption that, in the presence of n a trade union, but this assumption		

Figure 5. Methodological sheet and Indicators for "Freedom of Association and Collective Bargaining" subcategory

Once all the data referred to all the stakeholder categories for each product life cycle stage are collected, the social impacts can be evaluated with the help of the Social Impact Assessment method elaborated by GreenDeltaTC [5].

This methodology can be divided into two main steps: the Performance Assessment (PA) and the Impact Assessment (IA).

In the Performance Assessment step, the performance of the company and of the country where the company works is assessed for each subcategory of each stakeholder involved, based on the indicators, whose data can be both generic (at country level) and specific (at company level). Indeed, a company cannot be blamed for country-related behaviour, such as high unemployment rates or underdeveloped infrastructure of a region, but it can improve the situation through, e.g., locally employed workers or infrastructure projects.

Moreover, it is important to state that the Performance Assessment of the companies and countries is based on Performance Reference Points (PRP), which are based on internationally accepted standards (such as the ILO conventions, the ISO 26000 guidelines [8] and the OECD Guidelines for Multinational Enterprises, but also the principles of the United Nations Global Compact or the IFC Performance Standards on Social and Environmental Sustainability), goals or objectives according to conventions and best practice, etc. For instance, for the stakeholder



"Worker" and subcategory "Child labour", the PRP is "No occurrence of child labour"; for the subcategory "Fair salary", the PRP is "The wage level should ensure a decent standard of living. The payment of the minimum wage is often not sufficient. Further, companies should pay in time and do not withhold shares of the salary" [3].

Therefore, at the end of the PA step, a list of scores for each subcategory results, ranging from 1, meaning "Very good performance", to 6, meaning "Very poor performance". At each score, a colour is also assigned (see Table 4).

In the Impact Assessment step, the social impacts are evaluated starting from the PA scores. The results are evaluated by combining the PA scores with the strength of correlation (none, weak, strong) between the subcategories and a list of social impact categories, namely: Working Conditions (WC); Health & Safety (HS); Human Rights (HR); Socio-Economic Repercussions (SER); Indigenous Rights (IR); Governance (G).

A correlation between each subcategory and each of the above listed social impact category was needed; Stress S.c.ar.l. has performed an internal brainstorming in order to define the relationship among each subcategory and each Social Impact Category. The results of the brainstorming are reported in Table 1 (e.g. fair salary strongly impacts on the working condition, weakly impacts on the health and safety, does not impact on the indigenous rights).

Table 1. Stress S.c.ar.l. brainstorming on the correlation between Subcategories and Impact Categories

College Annual College	Impact Categories - STRESS							
Sub-categories	wc	HS	HR	SER	IR	G		
Delocalization and migration	✓	(✓)	(✓)	✓	✓	(✓)		
Community engagement	(✓)	✓	(✓)	✓	(✓)	✓		
Cultural Heritage	-	-	(✓)	✓	✓	✓		
Respect of indigeneous rights	(√)	(✓)	✓	(✓)	✓	(✓)		
Local employment	✓	(✓)	(✓)	✓	✓	✓		
Access to immaterial resources	(✓)	(✓)	✓	✓	(✓)	✓		
Access to material resources	-	(✓)	✓	✓	✓	(✓)		
Safe and healthy living conditions	✓	✓	✓	✓	(√)	(✓)		
Secure living conditions	(√)	✓	✓	(✓)	(✓)	(✓)		
Fair competition	✓	✓	✓	✓	-	✓		
Respect of intellectual property rights	(√)	-	-	✓	-	✓		
Supplier relationships	(✓)	(✓)	(√)	✓	-	✓		
Promoting social responsibility	✓	✓	✓	(✓)	(✓)	✓		
Health and safety	-	✓	(✓)	✓	-	✓		
Feedback mechanism	(√)	(✓)	✓	✓	-	✓		
Consumer privacy	-	-	✓	(✓)	-	✓		
Transparency	(✓)	✓	✓	✓	(✓)	✓		
End of life responsibility	✓	✓	✓	✓	✓	✓		
Freedom of association & collective bargaining	✓	✓	✓	✓	✓	✓		
Child labour	✓	✓	✓	✓	✓	✓		
Fair salary	✓	(✓)	✓	✓	-	✓		
Working hours	✓	✓	✓	✓	-	✓		
Forced labour	✓	✓	✓	✓	✓	✓		
Equal opportunities/discrimination	✓	✓	✓	✓	✓	✓		
Health and safety	✓	✓	✓	✓	-	✓		
Social benefits/social security	✓	✓	✓	✓	✓	(✓)		
Public commitments to sustainable issues	(✓)	(✓)	-	(✓)	-	✓		
Prevention and mitigation of armed conflicts	(✓)	✓	✓	✓	✓	✓		
Contribution to economic development	✓	(✓)	(✓)	✓	(✓)	✓		
Corruption	✓	✓	✓	✓	✓	✓		
Technology development	✓	✓	(√)	✓	-	✓		

The six impact categories are put in relationship with subcategories, using the symbols and criteria described in Table 2.



Table 2. Relationship criteria between Subcategories and Impact Categories

Sub	Subcategories and Impact Categories						
_	no impacts						
✓	strong relationship between subcategory and impact category						
(√)	weak relationship between subcategory and impact category						

Once the correlation between Subcategories and Impact Categories is defined, in order to convert the PA into the IA, a quantitative approach based on conventions and best practice is used.

Precisely, some values are firstly assigned to the relationship criteria, i.e. 1 point for " \checkmark ", 1/2 point for (\checkmark) and 0 points for "-" and, for each subcategory, the IA is evaluated, being the sum of the relationship criteria points related to the impact categories. From PA and IA, Table 3 reports the conversion rules defined in order to convert the performance assessment into social impacts.

2<IC<4 ∑ ∑ IC<2 IC>4 PA=1 can turn 2 1 1 2 PA=2 can turn 3 1 2 5<IC<6 PA=3 can turn 4 3 3 4<IC≤5 4 4<IC≤5 PA=4 4 can turn 3 5 5<IC<6 can turn 4 5 6 PA=5 PA=6 can turn 5 6 6

Table 3. Rules for PA to IA conversion

Therefore, at each subcategory, the IA can be assigned, ranging from 1, meaning "positive effect", to 6, meaning "Very negative effect". At each score, a colour is also assigned, as reported in Table 4.

Performance Assessment	Impact Assessment	Colour	Score
Very good performance	Positive effect		1
Good performance	Lightly positive effect		2
Satisfactory performance	Indifferent effect		3
Inadequate performance	Lightly negative effect		4
Poor performance	Negative effect		5
Very poor performance	Very negative effect		6

Table 4. Performance Assessment and Impact Assessment scale

Once the IA of each subcategory is evaluated, the IA of each stakeholder and, finally, the overall IA can be evaluated. In particular, the stakeholder IA is assessed as the average score of the IA of all the related subcategories. Similarly, the overall IA is assessed as the average score of the IA of all the stakeholders. In addition, specific calculation rules for the calculation of the final values are applied, e.g. (i) if at least one subcategory in a specific stakeholder group is assessed with factor "6", the amount of this stakeholder group is assessed with factor "5", the amount of this



stakeholder group cannot be better than "4"; and so on. The same is applied for the evaluation of the overall IA from the IA of all the stakeholders.

For a better understanding, Figure 6 summarizes the whole social impacts assessment structure and an example is provided soon after.

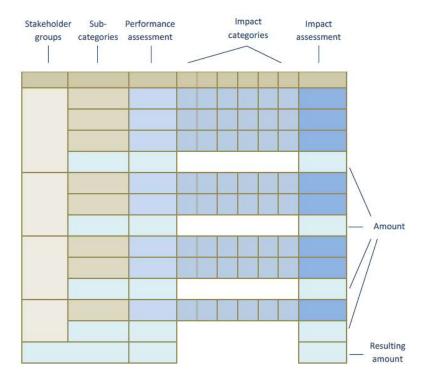


Figure 6. PA and IA assessment in S-LCA

The first column lists the different stakeholder groups and the second one incorporates subcategories associated to the stakeholders. In the third column, a PA indicator is assessed for each subcategory according to the behaviour described in the inventory, with the help of inventory indicators. From fourth to ninth column, the six impact categories are put in relationship with subcategories. In the final column, the PA indicators and the relationships between subcategories and impact categories are combined in order to provide the IA score. This process is performed for each subcategory and an example is provided in Figure 7 considering the Stakeholder category "workers" [3].

Stake- holder	Subcategory	PA	wc	HS	HR	SER	IR	G	IA
Workers	Freedom of association and collective bargaining	2	~	1	~	1	(✓)	(✓)	1
	Child labour	1	1	1	1	1	1	1	
	Discrimination	5	1	1	1	1	1	1	6
	Amount	4.00			40				5.00

Figure 7. Example of Social Performance Assessment and Impact Assessment

The stakeholder group "workers" includes the subcategories "freedom of association and collective bargaining", "child labour", and "discrimination". From the inventory phase has been evaluated that:



- The company provides a trade union and collective agreements. It does in general not restrict the rights of workers regarding freedom of association and collective bargaining, so the performance of the company was assessed with "good", which gives a light green assessment colour and the score "2". This good company performance has positive impacts on working conditions, health and safety, human rights, and causes positive socio-economic repercussions. The impacts on indigenous rights including cultural heritage and governance are rather low, but also positive. In general, the company performance has positive impacts (score "1").
- <u>The company does not employ children</u>. This influences all impact categories positively in relation to an employment of children. The company performance is very good and this ideal company behaviour has positive social effects.
- In terms of discrimination, the company performance is poor (score "5"), because the company <u>employs primary men and women earn less than men</u>. In addition, cases of sexual harassment occurred. Because all impact categories are influenced negatively, the impacts of this company behaviour are estimated as very negative impacts (score "6").

Therefore, in the presented example, the total PA for the Stakeholder "workers" cannot be better than "4" because, even if the average of the subcategory PA is 2.7, the presence of a "5" influences the overall performance; similarly, the total IA of the stakeholder "workers" cannot be better than "5" because, even if the average of the subcategory IA is 2.7, the presence of a "6" influences the overall social impact.

2.2 S-LCA Inventory questionnaire

One of the most important steps of the methodology is the social data collection. The inventory can be performed with the help of S-LCA questionnaires which includes a list of questions derived from the social indicators reported in each subcategory methodological sheet [2].

Stakeholder	Sub-Categories	Production A1-A3	Construction A4-A5	Use B1-B7	EoL C1-C4
	Delocalization and Migration				
	Community engagement				
	Cultural Heritage				
	Respect of indigeneous rights				
Local Community	Local employment				
	Access to immaterial resources				
	Access to material resources				
	Safe and Healthy living conditions				
	Secure living conditions				
	Fair competition				
Value Chain Actors	Respect of intellectual property rights				
value Chain Actors	Supplier relationships				
	Promoting social responsibility				
	Health and safety				
	Feedback mechanism				
Consumers	Consumer privacy				
Consumers	Transparency				
	End of life responsibility				
	Indoor climate comfort				
	Freedom of association & collective bargaining				
	Child labour				
	Fair salary				
Workers	Working hours				
VVOIKEIS	Forced labour				
	Equal opportunities/discrimination				
	Health and safety				
	Social benefits/social security				
	Public commitments to sustainable issues				
	Prevention and mitigation of armed conflicts				
Society	Contribution to economic development				
	Corruption				
	Technology development				

Figure 8. Identification of relevant stakeholders and subcategories



Questionnaires can be filled with the help of the companies and the involved stakeholders. For the HYBUILD project, the help of companies external to the consortium has been needed, in order to cover all the stages of the systems life-cycle (more details will be provided in the following sections). Therefore, two questionnaire typologies have been developed, having different complexity: a more detailed questionnaire made of around 120 questions (Table 5), and a shorter version of the questionnaire made of around 60 questions (Table 6). The shorter version was made in order to accelerate the data collection and collect data from partners external to the consortium.

Both questionnaires are shown below.

Table 5. Detailed version of the S-LCA questionnaire

Stakeholders	Subcategories	Questions				
		Does the organization contribute, directly or indirectly, to				
		migration of individuals? If yes, give details				
	Delocalization and	If yes, how many individuals resettle, voluntarily or				
	Migration	involuntarily, because of the organization?				
		Does the organization support local initiatives? If yes, give details				
		Does the organization collaborate with community				
	Community	stakeholders? If yes, give details				
	engagement	How many meetings with the community stakeholders				
		does the organization arrange?				
		Does the organization contribute to the local				
		development? If yes, how?				
lity	Cultural Heritage					
<u>ה</u>	- Cantan an Tremage	development? If yes, how? Does the organization have policies in place to protect cultural heritage? If yes, give details Does the organization have programs to include cultural heritage expression in the product design/production? Does the organization have policies in place to protect the rights of indigenous community members? How many annual meetings does the organization held				
l m						
Local Community						
oca						
	Respect on indigenous					
	rights					
		If yes, how many individuals resettle, voluntarily or involuntarily, because of the organization? Does the organization contribute to the integration of entering migrant? If yes, give details Does the organization support local initiatives? If yes, g details Does the organization collaborate with community stakeholders? If yes, give details How many meetings with the community stakeholders does the organization arrange? Does the organization contribute to the local development? If yes, how? Does the organization have policies in place to protect cultural heritage? If yes, give details Does the organization have programs to include culturn heritage expression in the product design/production? Does the organization have policies in place to protect rights of indigenous community members? How many annual meetings does the organization held with indigenous community members? Are there indigenous land rights conflicts/land claims withe organization? Does the organization hire local individuals? If yes, how many per year? Does the organization have policies for local hiring? If y give details Does the organization have policies for preference of local suppliers? What is the percentage of local suppliers on the total or suppliers? How many annual arrests connected to protests of				
		Does the organization have policies for local hiring? If yes,				
	Local employment					
	Local employment	Does the organization have policies for preference of local suppliers?				
		What is the percentage of local suppliers on the total of suppliers?				
	Access to immaterial					
	resources					
		,				



		Does the organization perform community education initiatives?				
		Does the organization conduct risk assessments with regard to potential conflict over material resources?				
	Access to material	Does the organization engage with local community over sustainable methods for sharing resources? If yes, give details				
	resources	Has the organization got a certified environmental management system? If yes, give details				
		Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects? If yes, positive or negative effects?				
		Is the organization committed to strengthen community health? If yes, give details				
	Safe and Healthy living	Is the organization committed to reduce hazardous substances? If yes, give details Does the organization have policies/regulations for safety? If yes, give details Does the organization measure air/water/earth pollution If yes, give details				
	conditions	safety? If yes, give details				
		If yes, give details				
		the organization?				
	Secure living conditions	effects? If yes, positive or negative effects? Is the organization committed to strengthen community health? If yes, give details Is the organization committed to reduce hazardous substances? If yes, give details Does the organization have policies/regulations for safety? If yes, give details Does the organization measure air/water/earth pollution? If yes, give details How many causalities and injuries per year are ascribed to the organization? How many legal complaints per year occurred against the organization with regard to security concerns? Does the organization have management policies related to private security personnel? If yes, give details Does the organization have documented statements or procedures to prevent engaging in anti-competitive behaviour? If yes, give details Are the employees aware of the importance of compliance with competition legislation and fair competition? Are there legal actions pending during the reporting period regarding anti-competitive behaviour and violation of anti-trust and monopoly legislation? If yes, give details How the organization approach to general intellectual				
		to private security personnel? If yes, give details				
		procedures to prevent engaging in anti-competitive				
	Fair competition	Does the organization conduct risk assessments with regard to potential conflict over material resources? Does the organization engage with local community over sustainable methods for sharing resources? If yes, give details Has the organization got a certified environmental management system? If yes, give details Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects? If yes, positive or negative effects? Is the organization committed to strengthen community health? If yes, give details Is the organization committed to reduce hazardous substances? If yes, give details Does the organization have policies/regulations for safety? If yes, give details Does the organization measure air/water/earth pollution? If yes, give details How many causalities and injuries per year are ascribed to the organization? How many legal complaints per year occurred against the organization with regard to security concerns? Does the organization have management policies related to private security personnel? If yes, give details Does the organization have documented statements or procedures to prevent engaging in anti-competitive behaviour? If yes, give details Are the employees aware of the importance of compliance with competition legislation and fair competition? Are there legal actions pending during the reporting period regarding anti-competitive behaviour and violation of anti-trust and monopoly legislation? If yes, give details				
Actors		period regarding anti-competitive behaviour and violation				
Supply Chain Actors	Respect of intellectual property rights	property rights and related issues associated with the				
Supp	property rights	regards to the respect of intellectual property rights?				
		•				
	Supplier relationships	lealth? If yes, give details Is the organization committed to reduce hazardous substances? If yes, give details Does the organization have policies/regulations for safety? If yes, give details Does the organization measure air/water/earth pollution? If yes, give details How many causalities and injuries per year are ascribed to the organization? How many legal complaints per year occurred against the organization with regard to security concerns? Does the organization have management policies related to private security personnel? If yes, give details Does the organization have documented statements or procedures to prevent engaging in anti-competitive behaviour? If yes, give details Are the employees aware of the importance of compliance with competition legislation and fair competition? Are there legal actions pending during the reporting period regarding anti-competitive behaviour and violation of anti-trust and monopoly legislation? If yes, give details How the organization approach to general intellectual property rights and related issues associated with the economic sector? What are the organization's policy and practice with regards to the respect of intellectual property rights? Is coercive communication with suppliers absent? Is lead time sufficient? Are volume fluctuations reasonable? Are the suppliers paid on time? What are the reference industry codes of conduct in the				
	Promoting social responsibility	What are the reference industry codes of conduct in the				



		Does the organization have an explicit code of conduct that protect human rights of workers among suppliers? If yes, give details
		What is the percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain?
		Are there initiatives that promotes social responsibility along the supply chain? If yes, give details
		Does the organization integrate ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures? If yes, give details
		Does the organization support the suppliers in terms of consciousness-raising and counselling concerning the social responsibility issues? If yes, give details
		Does the organization provide qualitative or quantitative information on product health and safety? If yes, give details
	Health and safety	What is the number of consumer complaints regarding health and safety?
		Does the organization have management measures to assess costumer health and safety?
		Does the product have labels of health and safety?
		Does the organization have a mechanism for customers to provide feedbacks?
	Feedback mechanism	Does the organization have management measures to improve feedback mechanisms?
ω		Does the organization have practices related to customer satisfaction, including results of surveys measuring customer satisfaction?
sumers		What is the organization strength related to internal management system to protect consumer privacy?
Cons	Consumer privacy	What is the number of consumer complains related to breach of privacy or loss of data within the last year?
	consumer privacy	What is the number of complaints by regulatory bodies related to breach on consumer privacy or loss of data within the last year?
		Is the organization compliant with regulations regarding transparency?
		What is the number of consumers complaints regarding transparency?
	Transparency	Does the organization publish annual sustainable reports? What is the quality and comprehensiveness of the information available in the sustainability report or in other documents regarding social and environmental performances of the organization?
		Does the organization communicate results of social and environmental life cycle impact assessment?



		Does the organization have certifications/labels for the product under investigation?				
		Do internal management systems ensure that clear				
	End of life responsibility	options?				
	responsibility	What is the number of incidents of non-compliance with				
		Are there evident restrictions to freedom of association				
		and collective bargaining? If yes, give details				
		product under investigation? Do internal management systems ensure that clear information is provided to consumers on end-of-life options? What is the number of incidents of non-compliance with regulatory labelling requirements in one year? Are there evident restrictions to freedom of association and collective bargaining? If yes, give details Is the presence of unions within the organization adequately supported? If yes, give details Are the workers free to join unions of their choosing? Are the employee/union representatives invited to contribute to planning of larger changes in the company, which will affect the working conditions? Do the workers have access to a neutral, binding and independent dispute resolution procedure? Are working children under the legal age or 15 years old present? If yes, how many? Are children performing work during night? Does the organization record all workers, including name ages and date of birth? If yes, give details Are working children younger than 15 or under the local compulsory age attending school? What is the minimum local living wage? What is the percentage of workers receiving the lowest paid?				
	Freedom of association					
	& collective bargaining					
		independent dispute resolution procedure? Are working children under the legal age or 15 years of present? If yes, how many? Are children performing work during night? Does the organization record all workers, including nat ages and date of birth? If yes, give details				
	Child labour	Does the organization record all workers, including names,				
		, ,				
S.		, ,				
Workers	Fair salary	Are the workers receiving the lowest paid considering that				
Š	, a sa.a. ,					
		,				
		Are the workers payments regular and documented?				
		•				
	Working hours					
		Do employment contracts stipulate wage, working time,				
	Forced labour					
		workers?				
		Are employment contracts kept on file?				



	Equal opportunities / Discrimination	Are birth certificate, passport, identity card, work permit or other original documents belonging to workers retained or kept for safety reasons by the organization? Are workers free to terminate their employment within the prevailing limits? Are workers bonded by debts exceeding legal limits to the employer? Does the organization have formal policies on equal opportunities? If yes, give details Does the organization announce open positions through national/regional newspapers, public job databases on internet, employment services or other publicly available media ensuring a broad announcement? What is the total number of incidents of discrimination? If there are, what is the number of actions taken? What is the composition of governance bodies and breakdown of employees per category according to
		gender, age group, minority, group membership and other indicators of diversity? What is the ratio of basic salary of men and women by employee category?
	Health and safety	What is the number/percentage of injuries or fatal accidents in the organization by job qualification? What is the number of hours of injuries per level of employees? Is a formal policy concerning health and safety present? Are adequate general occupational safety measures taken? Do preventive measures and emergency protocols regarding accidents and injuries exist? Do preventive measures and emergency protocols regarding pesticides and chemical exposure exist? Are appropriate protective gear required in all applicable situation present? What is the number of occupational safety and health administration violations reported within the past 3 years? What is the status of violation? Are education, training, counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases?
	Social benefits / Social security	Do the workers have social benefits? If yes, give details Are there evidences of violations of obligations to workers under labour or social security laws and employment regulations? If yes, give details What is the percentage of permanent workers receiving paid time-off?
Socie ty	Public commitments to sustainable issues	Are publicly available documents regarding promises or agreements on sustainability issues present?



	Does local community or other stakeholders complain on the non-fulfilment of organization's promises or agreements on sustainability issues? If yes, give details Are there mechanisms to follow-up the realization of promises on sustainability issues? If yes, give details
Pervention and	Is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits - extractive industries, forestry, fishery)?
Mitigation of Conflicts	linked to the escalation or de-escalation of conflicts (e.g. conflict escalation by massive pollution, de-escalation by trade beyond conflict boundaries)? What is the role of the organization in the development of conflicts?
Contribution to	Does the organization contribute to the local economic
economic development	progress?
	Is there risk of corruption in the sector?
	Is there a formalized commitment of the organization to prevent corruption?
Corruption	Does the organization carry out an anti-corruption program?
Corruption	allows significant profits - extractive industries, forestry, fishery)? Is the organization doing business in a sector otherwise linked to the escalation or de-escalation of conflicts (e.g. conflict escalation by massive pollution, de-escalation by trade beyond conflict boundaries)? What is the role of the organization in the development conflicts? Which are the disputed products? Does the organization contribute to the local economic progress? Is there risk of corruption in the sector? Is there a formalized commitment of the organization to prevent corruption? Does the organization carry out an anti-corruption program? Does the organization install or cooperate with internal and external controls to prevent corruption? Are there written documents on active involvement of the organization in corruption and bribery? If present, how much are the financial damages? What is the sector effort in technology development? Is the organization involved in technology transfer program or projects? If yes, give details Does the organization have partnerships in research and development? If yes, give details
	Are there written documents on active involvement of the organization in corruption and bribery?
	If present, how much are the financial damages?
	What is the sector effort in technology development?
Tachnalagu	
Technology development	Does the organization have partnerships in research and
	Does the organization invest in technology development/transfer? If yes, give details

Table 6. Short version of the S-LCA questionnaire

Stakeholders	Subcategories	Questions
Community	Delocalization and migration	Does the organization contribute, directly or indirectly, to migration of individuals? If yes, give details Does the organization contribute to the integration of entering migrant? If yes, give details
Local	Community	Does the organization support local initiatives? If yes, give
P	engagement	details

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		Does the organization collaborate with community			
		stakeholders? If yes, give details			
		Does the organization have policies in place to protect			
		cultural heritage and/or programs to include cultural			
	Cultural Heritage	heritage expression in the product design/production? If			
		yes, give details			
		Does the organization respect cultural customs and			
		traditions in any way? If yes, give details			
	Decree of the discourse	Does the organization have policies in place to protect the rights of indigenous community members?			
	Respect of indigenous	Does the organization respect indigenous rights, including			
	rights	the rights to lands, resources, cultural integrity, self-			
		determination, and self-government?			
		Does the organization have policies for local hiring? If yes,			
		give details			
	Local employment	Does the organization contribute somehow at the			
		reduction of local unemployment? If yes, how?			
		Does the organization guarantee freedom of expression of			
	Access to immaterial	the local community?			
	resources	Does the organization support communities in education			
		or other community services, if necessary?			
		Is the organization committed in minimizing somehow the			
		resources consumption?			
	Access to material	Has the organization caused infrastructures			
	resources	the local community? Does the organization support communities in education or other community services, if necessary? Is the organization committed in minimizing somehow the resources consumption? Has the organization caused infrastructures improvements (es roadways, waste disposal systems) having long term effects, in case the infrastructure is underdeveloped or not sufficient for a decent standard of living? Is the organization committed to strengthen community health and minimize the environmental pollution?			
	Safe and healthy living				
	conditions	Does the organization have policies/regulations for			
		safety? If yes, give details			
		How many causalities and injuries per year are ascribed to			
	Secure living conditions	the organization?			
	Secure living conditions	Does the organization contribute to secure living			
		conditions through private security personnel?			
		Does the organization have documented statements or			
		procedures to prevent engaging in anti-competitive			
	Fair competition	behaviour?			
ors		Are the employees aware of the importance of			
Supply Chain Actors		compliance with competition legislation and fair			
i.		competition?			
Ë		How the organization approach to general intellectual			
γlc	Respect of intellectual	property rights and related issues associated with the			
dn	property rights	economic sector?			
Ø		What are the organization's policy and practice with			
		regards to the respect of intellectual property rights?			
	Supplier relationships	Does the organization develop supplier relationships,			
		based on mutual co-operation?			



		Does the organization act fair regarding their suppliers and support them in terms of absence of coercive communication, sufficient lead time, reasonable volume fluctuation, payments on time?
	Promoting social responsibility	Does the organization have an explicit code of conduct that protect human rights of workers among suppliers? Does the organization audit the suppliers with regard to social responsibility along the supply chain? Does the organization integrate ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures?
	Health and safety	Do the organization provide qualitative or quantitative information on product health and safety? If yes, give details Does the organization have management measures to assess costumer health and safety?
	Feedback mechanism	Does the organization have a mechanism for customers to provide feedbacks? Does the organization have practices related to customer satisfaction, including results of surveys measuring customer satisfaction?
Consumers	Consumer privacy	What is the organization strength related to internal management system to protect consumer privacy? What is the number of consumer complains related to breach of privacy or loss of data within the last year?
ŭ	Transparency	Does the organization communicate regarding their product and social responsibility in a transparent way? Does the organization provide clear information to enable the consumer choice? (e.g. presence of product certifications/labels, publication of annual sustainable reports, communication of results of social and environmental life cycle impact assessment,)
	End of life responsibility	If relevant, does the organization provide information to consumers regarding appropriate end-of-life options? Does the organization develop systems for the product take back?
	Freedom of association and collective bargaining	Are there evident restriction to freedom of association and collective bargaining? Are the workers free to join unions of their choosing and is the presence of unions within the organization adequately supported?
Workers	Child labour	Are working children under the legal age or 15 years old present?
3	Fair salary	Does the organization guarantee that wage level ensures a decent standard of living? Are the workers payments regular and documented? Are there suspicious deductions on wages? If yes, give
		details



	Working hours	What is the maximum number of hours worked by employees and does it differ from the maximum number of hours effectively worked? What is the number of holidays used by employees?			
	Forced labour	Do workers voluntarily agree upon employment terms and are they free to terminate their employment within the prevailing limits?			
		holidays and terms of resignation?			
	Envel	Does the organization avoid any kind of discrimination? Does the organization have formal policies on equal			
	Equal opportunities/discrimin ation	What is the composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and			
	Health and safety	employees and does it differ from the maximum number of hours effectively worked? What is the number of holidays used by employees? Do workers voluntarily agree upon employment terms and are they free to terminate their employment within the prevailing limits? Do employment contracts stipulate wage, working time, holidays and terms of resignation? Does the organization avoid any kind of discrimination? Does the organization have formal policies on equal opportunities? If yes, give details What is the composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of diversity? Does the organization have an adequate management system for health and safety, so that the risk of workers is low? What is the number/percentage of injuries or fatal accidents in the organization? Please, also provide a reference period and a trend, if possible Does the organization provide social benefits as, for instance, medical insurance or pension insurance, which ensure a decent standard of living? If yes, give details Are publicly available documents regarding promises or agreements on sustainability issues present? Are there mechanisms to follow-up the realization of promises on sustainability issues? If yes, give details In case the organization is located in regions with a high risk of conflicts due to resource depletion, massive pollution or poor working standards, does it try to reduce the risk with appropriate measures? Do the organization contribute to the local economic progress, through different aspects as payment of wages, purchase of raw materials and supplies, investments etc. Is theoremization involved into cases of corruption? Is there a formalized commitment of the organization to			
	Treatti and sarety	accidents in the organization? Please, also provide a			
	Social benefits/ social security	system for health and safety, so that the risk of workers i low? What is the number/percentage of injuries or fatal accidents in the organization? Please, also provide a reference period and a trend, if possible Does the organization provide social benefits as, for instance, medical insurance or pension insurance, which ensure a decent standard of living? If yes, give details Are publicly available documents regarding promises or agreements on sustainability issues present? Are there mechanisms to follow-up the realization of promises on sustainability issues? If yes, give details In case the organization is located in regions with a high			
	Public commitments to sustainable issues	agreements on sustainability issues present?			
	Sustainable issues	promises on sustainability issues? If yes, give details			
	Prevention and mitigation of conflicts	risk of conflicts due to resource depletion, massive pollution or poor working standards, does it try to reduce			
Society	Contribution to economic development	progress, through different aspects as payment of wages,			
S	Corruption	Is there a formalized commitment of the organization to prevent corruption and/or does the organization carry out			
	Technology	efficient and environmental sound technologies? Is the organization involved in technology transfer			
	development	Does the organization invest in technology development/transfer? If yes, give details			



The data collected through questionnaires are also called "specific data" because they are specific of the company considered. Moreover, also "general data" have been collected in the present assessment. General data are collected at country level, considering the references reported in the methodological sheets related to each subcategories' indicators, in order to enrich the inventory and include the national context of the company under consideration.

General data have been collected for the countries where the involved companies work, considering the following indicators (in parenthesis, the related subcategory):

- International Migrants as a Percentage of Population (Delocalization and Migration)
- Public Trust on Politicians (Community engagement)
- Unemployment Statistics by Country (Local employment)
- Poverty and Working Poverty by Country (Local employment)
- Patent Filings (Access to material resources)
- Burden of Disease by Country (Safe and healthy living conditions)
- Pollution Levels by Country (Safe and healthy living conditions)
- Strength of Public Security in Country of operation (Secure living conditions)
- Presence of consumer complaints (Health and safety)
- Country ranking related to regulations on data-sharing (Consumer privacy)
- Presence of a law or norm regarding transparency (Transparency)
- Evidence of Country non-respect or support to Freedom of association and Collective bargaining (Freedom of association & collective bargaining)
- Percentage of children working by country and sector (Child labour)
- Living Wages (Fair salary)
- Minimum wage by country (Fair salary)
- Maximum number of working hours (Working hours)
- Women in the Labour force participation rate by country (Equal opportunities/discrimination)
- Country gender index ranking (Equal opportunities/discrimination)
- Occupational accident rate by country (Health and safety)
- Social security expenditure by country and branches of social security (Social benefits/social security)
- Economic situation of the country/region (Contribution to Economic Development)
- Risk of corruption in the country and/or sub-region (Corruption)

The data sources are identified in the S-LCA methodological sheets [2].



3 Social Life Cycle Assessment of Mediterranean HYBUILD System

The methodology explained in the previous section has been applied to both the Mediterranean and the Continental HYBUILD systems.

Firstly, the goal and the scope of the assessment are defined. The topic of the assessment is the Mediterranean HYBUILD system developed in WP2 and WP3 and shown in deliverable D4.2. The system is schematized in

Figure 9 and the components are the following:

- Sorption storage (sorption module + evaporator condenser).
- > Low temperature latent thermal energy storage (RPW-HEX).
- Electrical storage, DC system controller and PV panels.
- Compression DC-driven chiller.
- > Solar fields of Fresnel collectors + sensible heat storage (hydraulic system, buffer tank and DHW tank).

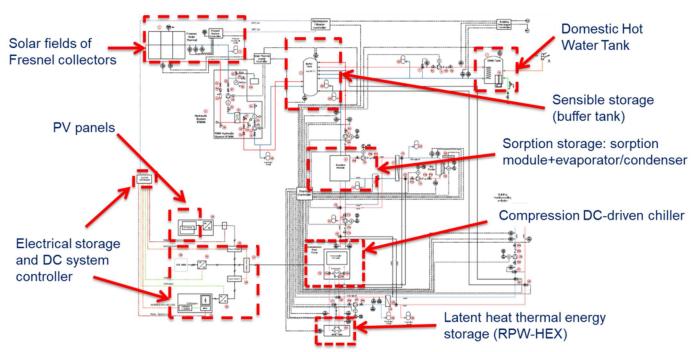


Figure 9. Components of the Mediterranean HYBUILD system

In the goal and scope phase of the S-LCA assessment, the life cycle stages of the Mediterranean system need to be defined. The stages included in the analysis, referred to the EN 15978 [7], are the following:

- A1-A3 stages, i.e. the production of each system components.
- A4-A5 stages, i.e. the transport from production site to installation site and the installation.
- B4 stage, i.e. the components replacement.
- C1-C4 stages, i.e. the component deconstruction, its transport of the component to waste processing, the waste processing and, finally, the disposal.

The companies involved in each of the indicated system life cycle stages were identified. For the A1-A3 stage, the related HYBUILD consortium partner responsible was chosen. For the other life cycle stages, if one or more of the HYBUILD partners were involved in these stages, they were taken in consideration; if not, partners external to the consortium were identified and included in the S-LCA. Indeed, since no companies inside the HYBUILD consortium are in charge of



performing the end of life stages of the system (or components) life-cycle, partners outside the consortium have been contacted.

Table 7 reports the identification of the involved companies. The social impacts are evaluated for each company included in the table and an average overall score is finally provided.

Table 7. Identification of the partners involved for each stage of the Mediterranean HYBUILD system life cycle

Stages

		A1-A3 stages	A4-A5 stages	B4 stage	C1 stage	C2 stage	C3 stage	C4 stage
	DC-bus	CSEM		Partner 1				External Partner 3
	Master controller	ENG						
	Batteries	Toshiba						
ents	Low temperature latent heat thermal energy storage	AKG	Fresnex, External Partner 1, COMSA		<u>.</u>	External	External Partner 3	
Components	Solar field of Fresnel collectors	FRESNEX			External Partner 2	Partner 2, External Partner 3		
ပိ	Heat pump	DAIKIN		Partner 2				
	Sorption storage (sorption module + evaporator condenser)	FAHR						
	Sensible heat storage (decentralized tank)	PINK						

Once the aim of the S-LCA and the involved actors are identified, the inventory and the impact assessment can start.

3.1 S-LCA Impact Assessment

The Social Life Cycle Assessment is based on the social data related to the involved companies and stakeholders. The data gathering has been performed with the help of the S-LCA questionnaires developed within the HYBUILD project and shown in Section 2.2. The questionnaires include a list of questions derived from the social indicators reported in each subcategory methodological sheet [2]. The questionnaires were sent for compilation to the partners involved in each stage of the HYBUILD system life cycle. Partners internal and external to the HYBUILD project provided their replies. In some cases, a 1-to-1 meeting was needed to help the partners in the data collection, in order to clarify the scope and the content of some requested info. General data have also been collected for the countries where the involved companies work, considering the indicators listed in Section 2.2.

The S-LCA Impact Assessment is the final stage of a Social Life Cycle Assessment. It is performed according to the methodology explained in section 2.1. Moreover, the analysis is performed for all the twelve companies indicated in Table 7.

In order to guarantee the confidentiality pledged between Stress S.c.ar.l. and the involved companies, the questionnaires replies are not provided; furthermore, when the S-LCA results are given for each company, the latter is renamed as "internal partner_ID" or "external partner_ID".

In the present section, for the sake of brevity, a couple of S-LCA impact assessments are provided. In particular, the assessment is explained for two out of twelve companies involved in



the Mediterranean HYBUILD system life cycle. All the IAs are provided in the Annex section, at page 63.

3.1.1 Impact Assessment of an Internal Partner

As reported in section 2.1, the S-LCA IA is performed by firstly doing a Performance Assessment of the company under analysis. Indeed, at each indicator, referred to each subcategory, collected during the inventory stage, a value from 1 (very good) to 6 (very bad) is assigned according to the Performance Reference Points (PRP). The score assigned to the subcategory is the average of the indicators values, in case the difference between the average value and maximum value among these indicators is minor/equal to one, otherwise is equal to maximum value less one. From the PA of each subcategory, the impact assessment is performed, considering six social impact categories (Working Condition, WC; Health and Safety, HS; Human Rights, HR; Socio-economic repercussions, SER; Indigenous rights including cultural heritage, IR; Governance, G), the relationship criteria between Subcategories and Impact Categories, described in Table 2, their correlation (Table 1) and the conversion rules from PA to IA (Table 3).

For the Internal Partner, this process leads to the following results (Table 8). The violet background of some indicators specifies the general data, i.e. that the information comes from national data, and not from the company data.

Table 8. S-LCA analysis of one Internal Partner included in the Mediterranean HYBUILD system life-cycle

				Impact Categories								
Subcategories	Indicators	Inventory	PA	wc	HS	HR	SER	IR	G	IA	TOTAL STAKEHOLDER	тот
	Unemployment Statistics by Country	1										
	Poverty and Working Poverty by Country	1										
	Percentage of workforce hired locally	-										
Local employment	Strength of policies on local hiring preferences (organization-specific indicator)	3	4	✓	(✓)	(✓)	✓	✓	✓	4		
	Presence of policies on spending on locally-based suppliers	3										
	Percentage on spending on locally-based suppliers	5										
	Burden of Disease by Country	1									3	3
	Pollution Levels by Country	1									3	J
	Does the organization measure air/water/earth pollution?	1										
Safe and healthy living	Presence/Strength of Laws on Construction Safety Regulations	1	3	✓	✓	✓	✓	(√)	(√)	3		
conditions	Management oversight of structural integrity	-										
	Organization efforts to strengthen community health (e.g. through shared community access to organization health resources)	4										



	Management effort to minimize	1										
	use of hazardous substances	1										
	Strength of Public Security in Country of operation	2										
	Management policies related to private security personnel	3										
Secure living conditions	Number of legal complaints per year occurred against the organization with regard to security concerns	1	2	(✓)	~	~	(√)	(√)	(✓)	2		
	Number of causalities and injuries per year ascribed to the organization	1										
	Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	1										
Fair competition	Employee awareness of the importance of compliance with competition legislation and fair competition	1	1	√	✓	✓	✓	-	✓	1		
competition	Legal actions pending or completed during the reporting period regarding anticompetitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has been identified as a participant	1										
Respect of intellectual property rights	Organization's policy and practice with regards to the respect of intellectual property rights	1	1	(✓)	-	-	✓	-	✓	2		
	Absence of coercive communication with suppliers	1									3	
Supplier	Sufficient lead time	3	2	(✓)	(√)	(✓)	✓	-	✓	2		
relationships	Reasonable volume fluctuations	2										
	Payments on time to suppliers	1										
	Industry codes of conduct in the sector	1										
	Presence of an explicit code of conduct that protect human rights of workers among suppliers	1										
Promoting social responsibility	Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	1	4	✓	✓	✓	(✓)	(√)	✓	4		
responsibility	Membership in initiatives that promotes social responsibility along the supply chain	5										
	Integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures	1										



	Support to suppliers in terms of											
	consciousness-raising and counselling concerning the social	5										
	responsibility issues											
	Evidence of Country non-respect or support to Freedom of association and Collective bargaining	1										
	Presence of unions within the organization is adequately supported	1										
Freedom of association &	Workers are free to join unions of their choosing	1		,		,	,		,			
collective bargaining	Employee/union representatives are invited to contribute to planning of larger changes in the company, which will affect the working conditions	1	- 1	√	~	~	~	•	~	1		
	Workers have access to a neutral, binding and independent dispute resolution procedure	1										
	Percentage of children working by country and sector	1	_									
Child labour	Absence of working children under the legal age or 15 years old	1	1	√	\	✓	✓	_	✓	1		
Crilia labour	Children are not performing work during the night	1	1	ľ		ľ				1		
	Records on all workers, stating names, ages and date of birth are kept on file	1									3	
	Minimum wage by country	1										
	Percentage of workers receiving the lowest paid The lowest paid workers are	1	-									
Fair salary	considering their wages meets their needs	-	1	√	(√)	✓	✓	-	✓	1		
	Presence of suspicious deductions on wages	1										
	Regular and documented payment of workers	1										
	Maximum number of working hours	1										
	Number of hours effectively worked by employees (at each level of employment)	1										
Working hours	Number of holidays effectively used by employees (at each level of employment)	1	1	√	\ \ \	√	√	\ \ \	√	1		
	Respect of contractual agreements concerning overtime	1	1	ľ				•				
	Clear communication of working hours and overtime arrangements	1										
	The organization provides flexibility	1										



	Percentage (estimate) of forced labour by region	2									
	Workers voluntarily agree upon employment terms	1	_								
	Employment contracts are comprehensible to the workers and are kept on file	1	-								
	Employment contracts stipulate wage, working time, holidays and terms of resignation	1	-								
Forced labour	Birth certificate, passport, identity card, work permit or other original documents belonging to workers are not retained or kept for safety reasons by the organization	1	2	~	*	✓	✓	✓	~	1	
	Workers are free to terminate their employment within the prevailing limits	1									
	Workers are bonded by debts exceeding legal limits to the employer	1									
	Women in the Labour force participation rate by country	2									
Equal opportunities/	Country gender index ranking	2	2							1	
	Presence of formal policies on equal opportunities	1									
	Announcement of open positions happen through national/regional newspapers, public job databases on internet, employment services or other publicly available media ensuring a broad announcement	1		✓		✓	✓	✓	✓		
discrimination	Total numbers of incidents of discrimination and actions taken	1									
	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of diversity	2	-								
	Ratio of basic salary of men to women by employee category	1									
	Occupational accident rate by country	5									
Health and	Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	1									
safety	Presence of a formal policy concerning health and safety	1	4	~	~	~	~	-	V	4	
	Adequate general occupational safety measures are taken	1									
	Preventive measures and emergency protocols exist regarding accidents & injuries	1									



	Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations	1										
	Education, training, counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases	1										
	Social security expenditure by country and branches of social security (e.g. healthcare, sickness, maternity)	2										
Social benefits/social security	List and provide short description of social benefits provided to the workers (e.g. health insurance, pension fund, child care, education, accommodation etc.)	2	2	✓	✓	√	√	✓	(✓)	1		
	Evidence of violations of obligations to workers under labour or social security laws and employment regulations.	1										
	Percentage of permanent workers receiving paid time-off	1										
	Presence of publicly available documents as promises or agreements on sustainability issues	2										
Public commitments to sustainable issues	Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders	1	2	(✓)	(√)	-	(✓)	-	✓	2		
	Presence of mechanisms to follow-up the realisation of promises	1									3	
	Sector efforts in technology development	-										
Technology	Involvement in technology transfer program or projects	4				, ,						
development	Partnerships in research and development	1	3	√	✓	(✓)	√	-	~	3		
	Investments in technology development/ technology transfer	1										



From these results, it can be underlined that the Internal Partner has a medium interest towards the **Local Community**. Indeed, if, from one side, the secure living conditions of the local community are guaranteed, in terms of absence of legal complaints occurred against the organization with regard to security concerns and no causalities and injuries ascribed to the organization; on the other side, very few efforts are made to strengthen community health and, regarding the local employment, no policies on local hiring are present and the percentage on spending on locally-based suppliers is very low, being equal to around 10%.

With regards to the **Value Chain Actors**, the company behaviour is good in terms of fair competition (policies are in place to prevent engaging in or being complicit in anticompetitive behaviour; the employees are regularly trained regarding the importance of compliance with competition legislation and fair competition); respect of intellectual property rights though the presence of policies and practices; supplier relationships, being coercive communication with suppliers absent, lead time sufficient, volume fluctuations reasonable and payment to suppliers on time. Nevertheless, the organization has a variable interest in terms of the promotion of social responsibility; indeed, even if an explicit code of conduct that protect human rights of workers among suppliers exists and the suppliers are suppliers audited with regard to social responsibility, no initiatives that promotes social responsibility along the supply chain are organized.

The interest of the Internal Partner with respect to the Workers is very high. Freedom of association and collective bargaining is guaranteed, child labour and forced labour are forbidden, the salary is fair, since no suspicious deductions on wages are present and payments are regular and documented, the working hours is fair, since it is equal to 40 hours/week, the number of holidays per year is adequate, the contractual agreements concerning overtime are respected, the communication of working hours and overtime arrangements is clear and the flexibility is provided. Moreover, regarding the equal opportunities, the organization has formal policies, the open positions happen through national/regional newspapers, public job databases on internet or available media and the salary is not depending on the gender but on the qualification; and regarding the social benefits, the organization has health insurance, payment during illness, 30 days of vacation, pension plan options and clearly defined payments per job category. Finally, health and safety are also guaranteed for the employees because no fatal accidents occurred, a formal policy concerning health and safety is present, adequate general occupational safety measures are taken, appropriate protective gear required in all applicable situations are present and education, training, counselling, prevention and risk control programs are in place to assist workforce members, their families or community members regarding serious diseases. Regarding this subcategory, the orange score, meaning a performance equal to 4, is due to the national general data regarding the occupational accident rate; indeed, in the country where the Internal Partner works, yearly fatal and non-fatal accidents are high with respect to the population.

As regards the **Society**, the behaviour of the Internal Partner is good. Indeed, the public commitments to sustainable issues is guaranteed by the company's Code of Conduct; moreover, no complaints related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders happened and mechanisms to follow-up the realization of promises are present. Regarding the technology development matter, the company has partnerships in research and development, such as cooperation with various



universities and research centres and funded projects, and invests in technology development; nevertheless, the technology transfer is allowed only within the company.

Following the methodology, from the PA evaluated for each subcategory and each stakeholder, it derives that the total Impact Assessment IA of Internal Partner is equal to 3 (Indifferent effect) on a scale ranging from 1 (positive effect) to 6 (very negative effect).

3.1.2 Impact Assessment of an External Partner

Following the process described in Sections 2.1 and 3.1.1, for the External Partner the results are reported in Table 9. Also in this case, the violet background of some indicators specifies the general data, i.e. that the information comes from national data, and not from the company data.

Table 9. S-LCA analysis of one External Partner included in the Mediterranean HYBUILD system life-cycle

					lm	pact	Catego	ories				
Subcategories	Indicators	Inventory	PA	wc	HS	HR	SER	IR	G	IA	TOTAL STAKEHOLDER	тот
Delocalization	International Migrants as a Percentage of Population	2	2	,	1.0	1.0		,	1.0			
and Migration	Direct or indirect contribution of the organization to migration of individuals	1	2	√	(√)	(✓)	✓	✓	(√)	1		
	Public Trust on Politicians	5										
Community engagement	Organizational support (volunteer-hours or financial) for community initiatives	1	4	(✓)	✓	(✓)	✓	(√)	✓	5		
	Collaboration with community stakeholders	1									4	
Cultural heritage	Policies in place to protect cultural heritage and/or programs to include cultural heritage expression in the product design/production	1	1	-	-	(✓)	✓	✓	√	1		3
	Respect of cultural customs and traditions	1									·	
	Unemployment Statistics by Country	2										
Local employment	Poverty and Working Poverty by Country	1	2	✓	(✓)	(✓)	✓	✓	✓	1		
employment	Strength of policies on local hiring preferences (organization-specific indicator)	1										
	Contribution to the reduction of local unemployment	1										
Access to	Patent Filings	3							() v	1		
immaterial resources	Guarantee freedom of expression of the local community	1	2	(✓)	(√)	✓	✓	(✓)				



Access to material resources	Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects? Commitment in minimizing the	5	4	_	(✓)	√	*	~	(✓)	4		
	resources consumption	1										
	Burden of Disease by Country	1										
Safe and healthy living conditions	Pollution Levels by Country	3	2	✓	✓	√	✓	(√)	(✓)	1		
Conditions	Commitment in strengthening community health and minimise the environmental pollution	1										
	Presence of policies/regulations for safety	1										
Secure living conditions	Strength of Public Security in Country of operation	3	2	(√)	✓	√	(√)	(√)	(✓)	2		
Conditions	Number of causalities and injuries per year ascribed to the organization	1										
Fair competition	Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	1	1	√	*	√	✓	-	√	1		
	Employee awareness of the importance of compliance with competition legislation and fair competition	1										
	Mutual co-operation with the suppliers	1	-									
Supplier relationships	Fair behaviour with the suppliers (absence of coercive communication, sufficient lead time, reasonable volume fluctuation, payments on time)	1	1	(✓)	(✓)	(✓)	✓	-	✓	1	1	
	Presence of an explicit code of conduct that protect human rights of workers among suppliers	1										
Promoting social responsibility	Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	2	2	✓	~	✓	(✓)	(✓)	✓	1		
	Integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures	1										
Health and safety	Presence of consumer complaints (at national, sectorial, organizational level)	1	1	-	✓	(✓)	✓	-	√	1	2	



1	1				ı		ı					
	Quality of or number of											
	information/signs on product	1										
	health and safety		_									
	Presence of management measures to assess costumer health and safety	1										
	Presence of a mechanism for											
	customers to provide feedback	1										
Feedback mechanism	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	1	1	(✓)	(✓)	√	✓	-	✓	1		
	Country ranking related to regulations on data-sharing	2										
Consumer privacy	Strength of internal management system to protect consumer privacy	1	2	-	-	√	(✓)	-	✓	2		
	Number of consumer complains related to breach of privacy or loss of data within the last year	1										
	Presence of a law or norm regarding transparency	1										
Transparency	Clear information to enable the consumer choice (e.g. presence of product certifications/labels, publication of annual sustainable reports, communication of results of social and environmental life cycle impact assessment)	1	1	(√)	✓	✓	√	(✓)	√	1		
	Communications regarding the product and social responsibility in a transparent way	1										
End-of-Life Responsibility	Presence of systems for the product take back	2	2	~	✓	√	✓	<	√	1		
	Evidence of Country non-respect or support to Freedom of association and Collective bargaining	1										
Freedom of association & collective	Evidence of restriction to freedom of association and collective bargaining	1	1	√	✓	✓	✓	✓	✓	1		
bargaining	Workers are free to join unions of their choosing and the presence of unions within the organization is adequately supported	2									4	
	Percentage of children working by country and sector	1										
Child labour	Absence of working children under the legal age or 15 years old	1	1	✓	✓	✓	✓	√	✓	1		
	Living Wages	2										
Fair salary	Presence of suspicious deductions on wages	1	2	✓	(√)	✓	✓	-	>	1		



	Regular and documented payment of workers	1									
	Guarantee that wage levels ensure a decent standard of living	1									
	Maximum number of working hours	1									
Working hours	Number of holidays effectively used by employees (at each level of employment)	1	1	√	\ \	\ \	√	_	√	1	
WORKING HOURS	Maximum number of hours worked by employees and possible difference with the maximum number of hours effectively worked	1	Ī		·	·	ŕ		·	1	
	Percentage (estimate) of forced labour by region	2									
Forced labour	Employment contracts stipulate wage, working time, holidays and terms of resignation	1	2	✓	✓	~	✓	✓	✓	1	
	Workers voluntarily agree upon employment terms and are free to terminate their employment within the prevailing limits	1									
	Women in the Labour force participation rate by country	4									
	Country gender index ranking	2									
Equal	Presence of formal policies on equal opportunities	5									
opportunities/ discrimination	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of diversity	4	4	*	*	*	✓	✓	√	5	
	Absence of any kinds of discrimination	1									
	Occupational accident rate by country	3									
Health and safety	Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	1	2	✓	~	✓	✓	-	√	1	
	Adequate management system for health and safety, so that the risk of workers is low	1									
Social	Social security expenditure by country and branches of social security (e.g. healthcare, sickness, maternity)	2									
benefits/social security	List and provide short description of social benefits provided to the workers (e.g. health insurance, pension fund, child care, education, accommodation etc.)	5	4	√	*	*	✓	✓	(✓)	5	



Public commitments to sustainable issues	Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of	5	5	(✓)	(✓)	-	(✓)	-	✓	5		
Contribution to	promises Economic situation of the country/region (GDP, economic growth, unemployment,)	4										
Economic Development	Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,)	1	3	✓	(✓)	(✓)	√	(✓)	✓	3		
	Risk of corruption in the country and/or sub-region	3									4	
Corruption	Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program	5	4	✓	~	✓	✓	✓	✓	5		
	Involvement in cases of corruption	1										
	Involvement in technology transfer program or projects	1										
Technology development	Engagement in the development of efficient and environmental sound technologies	1	1	√	✓	(✓)	✓	-	√	1		
	Investments in technology development/technology transfer	1										

From these results, it can be underlined that the External Partner has a medium interest towards the Local Community. Indeed, it does not contribute to the delocalization and migration of individuals; cultural heritage is respected through the presence of policies and programs taking into account the local use, culture and traditions; local employment is always preferred, when suitable. Regarding the access to immaterial resources, the company guarantees freedom of expression of the local community. Moreover, it is committed in strengthening community health and minimize the environmental pollution by installing systems with high energy efficiency and low emissions fuels, for the production of thermal and electric energy; and policies/regulations for safety are present, e.g. the air pollution is measured by monitoring the emissions of the energy production systems. Regarding the Health and Safety, no causalities and injuries are ascribed to the organization. On the other hand, some subcategories provide a worse contribution to the overall stakeholder category. Indeed, regarding the community engagement, from one hand the company supports the local initiatives and collaborates with community stakeholders by promoting them with the local authorities, with the aim at the energetic savings; but, on the other hand, in the country where the company works, the public trust on politicians is very low. This leads to a score equal to 4 for the subcategory "community engagement". The score is equal to 4 also for the subcategory "access to material resources" because, even if the company is committed in minimizing the resources consumption, it does not contribute to the improvements of the used infrastructures.



Regarding the **Value Chain Actors**, the company behaviour is very good in terms of fair competition, since policies are in place to prevent engaging in or being complicit in anticompetitive behaviour and the employees are aware of the importance of compliance with competition legislation and fair competition; supplier relationships, being the behaviour with the suppliers fair (meaning absence of coercive communication, sufficient lead time, reasonable volume fluctuations and on time payments); and social responsibility promotion, given the presence of an explicit code of conduct that protect human rights of workers among suppliers, the suppliers audits planning the with regard to social responsibility along the supply chain and the integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures.

With regards to the **Consumers**, the contribution to the overall S-LCA study is good. Indeed, regarding health and safety, the organization provides informative material for communication on health and safety of products; moreover, management measures to assess costumer health and safety are present. Mechanisms for customers to provide feedback are available and practices related to customer satisfaction are present. Consumer privacy is guaranteed, both at national and company levels, as well as transparency (information to enable the consumer choice is clear and communications regarding the product and social responsibility is done in a transparent way).

The interest of the External Partner with respect to the **Workers** is variable. Indeed, just few subcategories provide not a good behaviour, such as the "equal opportunities/discrimination", because no particular formal policies on equal opportunities are present and the number of female workers is very low (10% of the total employees); and the "social benefits/social security", because no particular social benefit are provided. On the other hand, freedom of association & collective bargaining is guaranteed, child labour and forced labour are absent, salary is fair (no suspicious deductions on wages are present, payments of workers are regular and documented, wage levels ensure a decent standard of living), working hours are fair (48 hours per week, 26 days of holiday per year, maximum number of hours worked by employees in line with the legislation).

Finally, with regards to the **Society**, the contribution to the overall S-LCA is equal to 4 (in a scale from 1-good to 6-bad). Indeed, from one side, the company has interest in the technology development, through the involvement in research and development projects with the national and regional authorities regarding the energy efficiency and the green chemistry and the investments in technology development/ technology transfer. Nevertheless, public commitments to sustainable issues are not present, a formalized commitment of the company to prevent corruption/presence of an anti-corruption program is not present and also the perceived level of national public sector corruption is quite high. Moreover, even if the company contributes to the local economic progress, the economic situation of the country is weak.

Following the methodology, from the PA evaluated for each subcategory and each stakeholder, it derives that the total Impact Assessment IA of External Partner is equal to 3 (Indifferent effect) on a scale from 1 (positive effect) to 6 (very negative effect).



3.2 Results and recommendations

The previous two subsections (Sections 3.1.1 and 3.1.2) show how the assessment has been performed for each company involved in one or more HYBUILD system life cycle stage(s). Once the Performance Assessment and the Impact Assessment are performed for all the companies indicated in Table 7, firstly, an average is evaluated for each life cycle stage, and, finally, the overall IA of the Mediterranean HYBUILD system can be evaluated as the total average.

Therefore, the **Total Social Impact** evaluated for the **Mediterranean HYBUILD** system is **4.06**, on a scale from 1 (positive effect) to 6 (very negative effect), as reported in Table 10.

S-LCA Results - Mediterranean HYBUILD system A1-A3 A4-A5 **B4 C1** C2 **C3** C4 DC-Bus Master controller Components Low temperature latent heat thermal energy storage 5 3.25 3.33 3.33 4 4.5 5 Solar field of Fresnel collectors Heat pump Sorption storage (sorption module + evaporator condenser) Sensible heat storage (decentralized PINK tank) **TOTAL Social Impact** 4.06

Table 10. Social Impact of the Mediterranean HYBUILD system

The results indicate that the Mediterranean HYBUILD system has a lightly negative effect, it can still be socially accepted, but some social improvements are needed.

In particular, in the initial life cycle stages of the HYBUILD system (production of the system components, installation and the use), the social aspects are taken in consideration more than in the End-of-Life stages (deconstruction, transport of the component to waste processing, waste processing, disposal). The latter, indeed, contribute to the behaviour social worsening of the entire system life cycle.

In particular, in the production stage, the average of the impacts related to the single stakeholders is around 3 for all the considered components. This means that the social behaviour is almost equal with respect to the stakeholders categories. This is not completely true for the other stages, where, on average, the behaviour towards the Value Chain Actors is always better than the behaviour towards the other stakeholder categories. The highest contribution to the S-LCA impacts in the EoL stages is therefore related to the other stakeholder categories: local community, consumers, workers, society.

It is also important to underline that the companies involved in the EoL stages are not within the HYBUILD consortium; therefore, the overall social impacts could be enhanced involving other different companies in the End-of-Life Stages.



4 Social Life Cycle Assessment of Continental HYBUILD System

Similarly, the S-LCA methodology has also been applied to the Continental HYBUILD systems.

The S-LCA starts with the definition of the goal and the scope of the assessment. The topic of the assessment is the Continental HYBUILD system developed in WP2 and WP3 and shown in the deliverable D4.2. The system is schematized in Figure 9 and the components are the following:

- ➤ High temperature latent thermal energy storage.
- Electrical storage, DC system controller.
- Compression DC-driven chiller.
- Sensible heat storage (decentralized PINK tank).

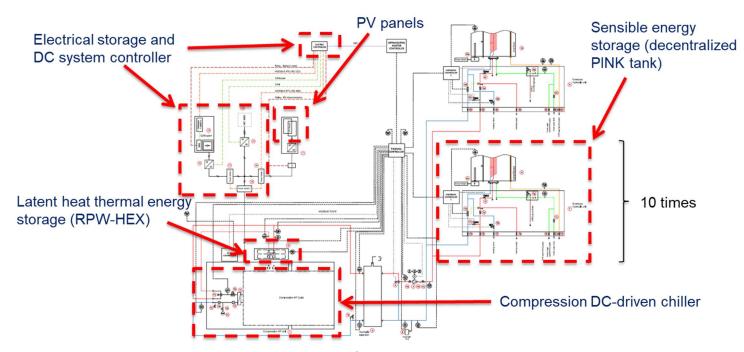


Figure 9. Components of Continental HYBUILD system

As for the Mediterranean system, the life cycle stages to be included in the analysis and referred to the EN 15978 [7], are the following:

- A1-A3 stages, i.e. the production of each system components.
- A4-A5 stages, i.e. the transport from production site to installation site and the Installation.
- B4 stage, i.e. the components replacement.
- C1-C4 stages, i.e. the component deconstruction, its transport of the component to waste processing, the waste processing and, finally, the disposal.

For each of the life-cycle stages above listed, the companies involved are identified. For the A1-A3 stage, the related HYBUILD consortium partner responsible is chosen. For the other life cycle stages, if one or more of the HYBUILD partners are involved in these stages, they are taken in consideration; if not, partners external to the consortium are identified and included in the S-LCA. Indeed, since no companies inside the HYBUILD consortium are in charge of performing the end of life stages of the system (or components) life-cycle, partners outside the consortium have been contacted.

Table 11 reports the identification of the involved companies. The social impacts are evaluated for each company included in the table and an average overall score is finally provided.



Table 11. Identification of the partners involved for each stage of the Continental HYBUILD system life cycle

Stages A1-A3 A4-A5 B4 stage C1 stage C4 stage C2 stage C3 stage stages stages DC-bus **CSEM** Compression DC-driven **OCHNER** Chiller – Heat Pump Components Master controller External External **ENG** External Partner 1. External Partner 2. External External Partner 1. **Batteries** External Partner 2 External Partner 3 Partner 3 Toshiba **COMSA** Partner 3 Partner 2 High temperature latent **AKG** heat thermal energy storage Sensible heat storage **PINK** (decentralized PINK tank)

Starting from the identification of the involved actors, the inventory, i.e. the social data gathering, and the impact assessment can be performed.

4.1 S-LCA Impact Assessment

As previously stated, the Social Life Cycle Assessment is based on the social data related to the involved companies and stakeholders. The inventory has been performed in parallel for the two HYBUILD systems. This means that, even if some different partners have been involved in the social life cycle assessment, same questionnaires have been sent in order to collect the social data. The data gathering and the questions asked are described in section 2.2.

The S-LCA Impact Assessment is the final stage of a Social Life Cycle Assessment, performed according to the methodology explained in section 2.1. For the Continental HYBUILD system, the analysis is performed for all the ten companies indicated in Table 11.

In order to guarantee the confidentiality pledged between Stress S.c.ar.l. and the involved companies, the questionnaires replies are not provided; furthermore, when the S-LCA results are given for each company, the latter is renamed as "internal partner_ID" or "external partner_ID".

Also in the present section, for the sake of brevity, a couple of S-LCA impact assessments are provided; indeed, the assessment is explained for two out of ten companies involved in the Continental HYBUILD system life cycle. All the IAs are provided in the Annex section, at page 63. One internal and one external partners are considered for the S-LCA of the Continental systems.

4.1.1 Impact Assessment of an Internal Partner

Following the process described in Section 2, and the previous examples described and analysed at the Sections 3.1.1 and 3.1.2, one internal partner involved in the life-cycle of the Continental HYBUILD systems is analysed hereafter. S-LCA results are reported in Table 12. Also in this case, the violet background of some indicators specifies the general data, i.e. that the information comes from national data, and not from the company data.



Table 12. S-LCA analysis of one Internal Partner included in the Continental HYBUILD system life-cycle

Impact Categories TOTAL Subcategories **Indicators** Inventory PΑ wc HS HR SER IR G IΑ TOT **STAKEHOLDER** International Migrants as a 3 Percentage of Population Delocalization 4 **(√) (√) (√)** 4 Direct or indirect contribution and Migration of the organization to migration 4 of individuals **Public Trust on Politicians** 2 Number of meetings with 6 Community community stakeholders 5 **(√) (✓) (**✓) 6 engagement Organizational support (volunteer-hours or financial) 1 for community initiatives Unemployment Statistics 1 Country Poverty and Working Poverty by 1 Country Percentage of workforce hired 1 locally Local Strength of policies on local **(√) (√)** 2 employment hiring preferences 2 (organization-specific indicator) Presence of policies on spending 2 on locally-based suppliers Percentage on spending on 3 locally-based suppliers 5 Access to **Patent Filings** 1 1 **(√) (**✓) immaterial 1 Annual arrests connected to 1 resources protests of organization actions Strength of organizational risk assessment with regard to 5 potential for material resource conflict Does the organization engage with local community over 1 sustainable methods for sharing Access to resources? **(√)** material 4 **(√)** Does the organization have a resources certified environmental 2 management system Has the organization caused infrastructures improvements (e.g. roadways, waste disposal 2 systems) having long term effects? Safe and Burden of Disease by Country 1 healthy living 1 **(**✓) **(√)** 1 Pollution Levels by Country 1 conditions Strength of Public Security in 1 Country of operation Secure living **(√)** 1 **(√) (√) (√)** conditions Management policies related to 1 private security personnel



	Number of legal complaints per year occurred against the organization with regard to security concerns	1										
	Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	5										
Fair competition	Employee awareness of the importance of compliance with competition legislation and fair competition	1	4	✓	✓	✓	✓	-	✓	4		
	Legal actions pending or completed during the reporting period regarding anticompetitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has been identified as a participant	1									5	
Supplier relationships	Payments on time to suppliers	1	1	(✓)	(✓)	(✓)	✓	-	✓	1		
Promoting social responsibility	Presence of an explicit code of conduct that protect human rights of workers among suppliers	5	5	√	✓	✓	(✓)	(✓)	√	6		
	Presence of consumer complaints (at national, sectorial, organizational level)	1										
Health and safety	Presence of consumer complaints (at national, sectorial, organizational level)	1	1	-	✓	(√)	✓	-	✓	1		·
,	Presence of management measures to assess costumer health and safety	1										
	Presence of labels of health and safety requirements	1										
Feedback mechanism	Presence of a mechanism for customers to provide feedback Management measures to	1	1	(√)	(√)	✓	~	-	✓	1		
	improve feedback mechanisms Country ranking related to regulations on data-sharing	1										
Consumer privacy	Number of consumer complains related to breach of privacy or loss of data within the last year	1	1	-	-	✓	(√)	-	√	1	4	
,	Number of complaints by regulatory bodies related to breach on consumer privacy or loss of data within the last year	1										
	Presence of a law or norm regarding transparency	1										
Transparency	Non-compliance with regulations regarding transparency	1	4	(√)	✓	✓	✓	(√)	✓	5		
	Consumers complaints regarding transparency	1										
	Publication of a sustainability report	5										



End-of-Life	Communication of the results of social and environmental life cycle impact assessment Certifications/labels the organization obtained for the product under investigation Do internal management systems ensure that clear information is provided to consumers on end-of-life	5 3 1										
Responsibility	options? Annual incidents of non- compliance with regulatory labelling requirements in one year?	1	_ 1	√	✓	~	✓	~	~	1		
	Evidence of Country non- respect or support to Freedom of association and Collective bargaining	1										
	Presence of unions within the organization is adequately supported Workers are free to join unions	1	-									
Freedom of association & collective bargaining	of their choosing Employee/union representatives are invited to contribute to planning of larger changes in the company, which will affect the working conditions	5	4	✓	✓	*	*	*	*	5		
	Workers have access to a neutral, binding and independent dispute resolution procedure	1										
	Living Wages	1										
	Minimum wage by country	1										
	Percentage of workers receiving	1									5	
Fair salary	the lowest paid The lowest paid workers are considering their wages meets their needs	1	1	√	(√)	✓	✓	-	✓	1		
	Presence of suspicious	1										
	deductions on wages Regular and documented payment of workers	1	-									
	Maximum number of working hours	1										
	Number of hours effectively worked by employees (at each level of employment)	1										
Working hours	Number of holidays effectively used by employees (at each level of employment)	1	1	✓	✓	✓	✓	-	✓	1		
	Respect of contractual agreements concerning overtime	1										
	Clear communication of working hours and overtime arrangements	1										



	The organization provides flexibility	1									
	Percentage (estimate) of forced labour by region	2									
	Workers voluntarily agree upon employment terms	1									
	Employment contracts are comprehensible to the workers and are kept on file	1									
	Employment contracts stipulate wage, working time, holidays and terms of resignation	1									
Forced labour	Birth certificate, passport, identity card, work permit or other original documents belonging to workers are not retained or kept for safety reasons by the organization	1	1	√	*	*	✓	*	✓	1	
	Workers are free to terminate their employment within the prevailing limits	1									
	Workers are bonded by debts exceeding legal limits to the employer	1									
	Women in the Labour force participation rate by country	2									
	Country gender index ranking	2									
	Presence of formal policies on equal opportunities	5									
Equal opportunities/ discrimination	Announcement of open positions happen through national/regional newspapers, public job databases on internet, employment services or other publicly available media ensuring a broad announcement	1	4	√	✓	~	✓	~	~	5	
	Total numbers of incidents of discrimination and actions taken	1									
	Ratio of basic salary of men to women by employee category	1									
	Occupational accident rate by country	5									
	Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	4									
Health and safety	Presence of a formal policy concerning health and safety	1	4	✓	✓	✓	✓	_	✓	4	
Jaiety	Adequate general occupational safety measures are taken	1									
	Preventive measures and emergency protocols exist regarding accidents & injuries	1									
	Preventive measures and emergency protocols exist	1									



	regarding pesticides and											
	chemical exposure Appropriate protective gear required in all applicable situation present	1										
	Number of occupational safety and health administration violations reported within the past 3 years and status of violations	4										
	Education, training, counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases	1										
	Social security expenditure by country and branches of social security (e.g. healthcare, sickness, maternity)	2										
Social benefits/social security	List and provide short description of social benefits provided to the workers (e.g. health insurance, pension fund, child care, education, accommodation etc.)	2	2	✓	✓	✓	✓	*	(✓)	1		
	Evidence of violations of obligations to workers under labour or social security laws and employment regulations.	1										
	Percentage of permanent workers receiving paid time-off	1										
Public commitments	Presence of publicly available documents as promises or agreements on sustainability issues	-										
to sustainable issues	Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders	1	1	(✓)	(√)	-	(✓)	-	√	1		
	Economic situation of the country/region (GDP, economic growth, unemployment,)	1									1	
Contribution to Economic Development	Contribution of the organization to the economic progress	1	1	✓	(√)	(✓)	✓	(✓)	✓	1		
	Partnerships in research and	1										
Technology development	development Investments in technology development/technology transfer	1	1	✓	✓	(✓)	✓	-	✓	1		



From these results, it can be underlined that, regarding the Local Community, the behaviour is quite variable. Indeed, the Internal Partner is very interested in local employment, since around 90% of the staff comes from the nearest districts and also the percentage on spending on locallybased suppliers is high. Regarding the access to immaterial resources, no arrests connected to protests of organization actions happened and also the national number of total patents application is high when referred to the national population. Regarding the safe and healthy living conditions, no data are available from the partner, but the national data on the burden of disease and on the pollution levels are good; and regarding the secure living conditions, no legal complaints occurred against the organization with regard to security concerns, and a management policy related to private security personnel exists. On the other hand, in the community engagement the Internal Partner has a variable behaviour, given that it supports social associations and organizations, such as local fire brigades, sport clubs, hospitals, and others, but no meetings are organized with community stakeholders. With regards to the access to material resources, the Internal Partner is currently working on the ISO 14001 certification, it engages with local community over sustainable methods for sharing resources, but it does not perform a risk assessment with regard to potential for material resource conflict, even if it tries to be very resource-efficient. With respect to the delocalization and migration, the staff comes from 15 different countries, who voluntarily agree on their delocalization.

Also concerning the **Value Chain Actors**, the behaviour is quite variable. Moreover, few data could be collected. Therefore, even if the employees are aware of the importance of compliance with competition legislation and fair competition and no legal actions are pending or completed regarding anti-competitive behaviour, no documented statement or procedures to prevent engaging in or being complicit in anticompetitive behaviour exists. Nevertheless, if the company continues to grow, this is planned for the future. The suppliers relationships are good since the payments always are on time. However, an explicit code of conduct that protect human rights of workers among suppliers is not yet present, but it is planned for the future, in case the company continues to grow.

With regards to the **Consumers**, the performance of the Internal Partner is better, when compared to the previous two stakeholder categories. Indeed, for the subcategories "health and safety", "feedback mechanism", "consumer privacy" and "End-of-Life responsibility", the company behaviour is very good (no consumer complaints happened regarding the health and safety and the privacy, management measures to assess costumer health and safety are used, labels of health and safety requirements are present, mechanisms for customers to provide feedback are present, as well as management measures to improve feedback mechanisms and internal management systems ensuring that clear information is provided to consumers on end-of-life options. On the other hand, even if the company is compliant with regulations on transparency, no sustainability reports are published yet and no communication of the results of social and environmental life cycle impact assessment is made. Nevertheless, the company states that, in case of growth, these activities will be considered.

The performance of the Internal Partners with reference to the Workers is also not very good, because of some considered indicators. Indeed, salary is fair (suspicious deductions on wages are not present, workers payments are regular and documented and workers are overpaid according to the collective agreement), working hours are fair (on average, 40 hours per week, with 25-30 days of holidays effectively used by employees, possibility of flexibility, clear communication of working hours and overtime arrangements and respect of contractual



agreements concerning overtime), forced labour is absent, some social benefits are provided paid time-off, assistance of a company doctor provided. Nevertheless, regarding the equal opportunities/discrimination, even if the communication of open positions happens on media, social media and other public channels, no incidents of discrimination happened and the ratio of basic salary of men to women is fair; no formal policies on equal opportunities are present. This means that the behaviour of the company is fair, but to policies are present that can confirm it. With regards to the freedom of association & collective bargaining, the unions within the organization are present and adequately supported, workers are free to join unions of their choosing, but employee/union representatives are not invited to contribute to planning of larger changes in the company. Finally, regarding the Health and Safety, a formal policy concerning health and safety exists, adequate general occupational safety measures are taken, preventive measures and emergency protocols exist regarding accidents/injuries and regarding pesticides/chemical exposure. Nevertheless, one bigger injury happened 5 years ago, and three smaller injuries happened within the last 3 years and also the national occupational accident rate is high with respect to the national population.

Finally, with regards to the **Society**, the Internal Partner behaviour is very good. No complaints related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders happened, the company contributes to the economic progress by paying good wages to the employees, by strongly investing in R&D, by investing for the expansion of the infrastructure at its production site. In addition, the company has partnerships in research and development and invests in technology development and technology transfer.

Following the methodology, from the PA evaluated for each subcategory and each stakeholder, it derives that the total Impact Assessment IA of the analysed Internal Partner is equal to 4 on a scale from 1 (positive effect) to 6 (very negative effect). It can be underlined that, in case the company continues its growth, the overall social performances will surely improve (e.g. policies would be developed, as well as management systems, and others).



4.1.2 Impact Assessment of an External Partner

An additional and final Impact Assessment is reported hereafter for an external partner involved in the Continental HYBUILD system life-cycle. S-LCA results are reported in Table 13. As for the previous cases, the violet background of some indicators specifies the general data, i.e. that the information comes from national data, and not from the company data.

Table 13. S-LCA analysis of one External Partner included in the Continental HYBUILD system life-cycle

					lm	pact C	Categor	ries				
Subcategories	Indicators	Inventory	PA	wc	HS	HR	SER	IR	G	IA	TOTAL STAKEHOLDER	тот
	International Migrants as a Percentage of Population	2										
Delocalization and Migration	Direct or indirect contribution of the organization to migration of individuals	1	2	✓	(√)	(√)	✓	✓	(✓)	1		
	Strength of organizational procedures for integrating migrant workers into the community	1										
	Public Trust on Politicians	5										
Community engagement	Organizational support (volunteer-hours or financial) for community initiatives	1	4	(✓)	~	(✓)	✓	(√)	✓	4		
	Collaboration with community stakeholders	1										
Cultural heritage	Policies in place to protect cultural heritage and/or programs to include cultural heritage expression in the product design/production	3	4	-	-	(✓)	√	✓	✓	4		
	Respect of cultural customs and traditions	5									3	4
	Unemployment Statistics by Country	2									3	4
Local	Poverty and Working Poverty by Country	2										
Local employment	Strength of policies on local hiring preferences (organization-specific indicator)	1	2	✓	(✓)	(✓)	✓	✓	✓	1		
	Contribution to the reduction of local unemployment	1										
	Patent Filings	3										
Access to immaterial	Presence/strength of community education initiatives	1	2	(√)	(√)	√	✓	(√)	✓	1		
resources	Guarantee freedom of expression of the local community	1		, ,	` ,			, ,				
Access to material resources	systems) having long term effects?	2	3	-	(✓)	✓	✓	✓	(√)	3		
	Commitment in minimizing the resources consumption	3										



	Burden of Disease by Country	1										
	Pollution Levels by Country	1										
Safe and healthy living conditions	Commitment in strengthening community health and minimise the environmental pollution	1	1	√	✓	✓	✓	(✓)	(✓)	1		
	Presence of policies/regulations for safety	1										
	Strength of Public Security in Country of operation	1										
Secure living conditions	Management policies related to private security personnel	3	2	(✓)	✓	✓	(√)	(√)	(√)	2		
	Number of causalities and injuries per year ascribed to the organization	1										
Fair competition	Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	4	3	√	✓	√	√	_	√	3		
	Employee awareness of the importance of compliance with competition legislation and fair competition	1										
Respect of intellectual	Approach to general intellectual property rights and related issues associated with the economic sector	2	2	(√)	_	_	√	_	✓	2		
property rights	Organization's policy and practice with regards to the respect of intellectual property rights	2		,								
	Mutual co-operation with the suppliers	1									3	
Supplier relationships	Fair behaviour with the suppliers (absence of coercive communication, sufficient lead time, reasonable volume fluctuation, payments on time)	1	1	(✓)	(✓)	(✓)	√	-	✓	1		
	Presence of an explicit code of conduct that protect human rights of workers among suppliers	3										
Promoting social responsibility	Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	5	4	√	✓	✓	(✓)	(✓)	✓	4		
	Integration of ethical, social, environmental and gender- equality criterions in purchasing policy, distribution policy and contract signatures	4										
Health and	Presence of consumer complaints (at national, sectorial, organizational level)	1	1	-	√	(✓)	√	-	√	1	3	
safety	Quality of or number of information/signs on product health and safety	-				. ,						



	<u> </u>						l	_				
	Presence of management	1										
	measures to assess costumer	1										
	health and safety Presence of a mechanism for				-							
	customers to provide feedback	1										
Feedback	Practices related to customer											
mechanism	satisfaction, including results of		4	(✓)	(✓)	✓	✓	-	✓	4		
Incenanism	surveys measuring customer	5										
	satisfaction											
	Country ranking related to											
	regulations on data-sharing	1										
Consumer	Strength of internal management											
privacy	system to protect consumer	1	1	-	-	✓	(√)	-	✓	1		
privacy	privacy											
	Number of consumer complains											
	related to breach of privacy or	1										
	loss of data within the last year Presence of a law or norm											
	regarding transparency	1										
	Clear information to enable the											
	consumer choice (e.g. presence											
	of product certifications/labels,											
	publication of annual sustainable											
Transparency	reports, communication of	1	3	(√)	✓	✓	✓	(✓)	✓	3		
, ,	results of social and			` ′				` ′				
	environmental life cycle impact											
	assessment)											
	Communications regarding the											
	product and social responsibility	4										
	in a transparent way											
	Do internal management											
	systems ensure that clear											
End-of-Life	information is provided to	1	4	1	✓	✓	√	✓		4		
Responsibility	consumers on end-of-life		1	Ý	v	*	'	*	✓	1		
	options? Presence of systems for the											
	product take back	-										
	Evidence of Country non-respect											
	or support to Freedom of											
	association and Collective	1										
	bargaining											
Freedom of	-											
association &		1	1	1	✓	✓	√	✓	✓	1		
collective	collective bargaining		1	ľ		•	•	•	•	1		
bargaining	Workers are free to join unions											
	of their choosing and the											
	presence of unions within the	1										
	organization is adequately										3	
	supported											
	Percentage of children working	1										
	by country and sector			,								
Child labour	Absence of working children		1	✓	✓	~	✓	✓	✓	1		
	under the legal age or 15 years	1										
	old											
	Living Wages	2										
Fair salary	Minimum wage by country	2	2	1	(√)	✓	✓	_	✓	1		
Tan Salary	Presence of suspicious			ļ .	(,	•		-		_		
	deductions on wages	1										
1	·			-	•		•——					



	Pogular and documents d											
	Regular and documented payment of workers	1										
	Guarantee that wage levels	1										
	ensure a decent standard of living	1										
	Maximum number of working hours	2										
Working hours	Number of holidays effectively used by employees (at each level of employment).	1	2	√	√	√	 	_	✓	1		
Working Hours	Maximum number of hours worked by employees and possible difference with the maximum number of hours effectively worked	2										
	Percentage (estimate) of forced labour by region	2										
Forced labour	Employment contracts stipulate wage, working time, holidays and terms of resignation	1	2	✓	✓	✓	√	✓	✓	1		
	Workers voluntarily agree upon employment terms and are free to terminate their employment within the prevailing limits	1										
	Women in the Labour force participation rate by country	2										
	Country gender index ranking	2	-									
Equal	Presence of formal policies on equal opportunities	1										
opportunities/d iscrimination	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of diversity	1	2	*	✓	*	√	*	✓	1		
	Absence of any kinds of discrimination	1										
	Occupational accident rate by country	5										
Health and safety	Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	1	4	✓	✓	✓	√	-	✓	4		
	Adequate management system for health and safety, so that the risk of workers is low	1										
Social	Social security expenditure by country and branches of social security (e.g. healthcare, sickness, maternity)	2										
benefits/social security	List and provide short description of social benefits provided to the workers (e.g. health insurance, pension fund, child care, education, accommodation etc.)	2	2	√	✓	✓	~	✓	(✓)	2		
Public commitments to sustainable issues	Presence of publicly available documents as promises or agreements on sustainability issues	5	5	(✓)	(✓)	-	(✓)	-	✓	5	4	



	Presence of mechanisms to follow-up the realisation of promises	5									
	Economic situation of the country/region (GDP, economic growth, unemployment,)	1									
Contribution to Economic Development	Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,)	1	1	✓	(~)	(✓)	√	(~)	✓	1	
	Risk of corruption in the country and/or sub-region	3									
Corruption	Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program	4	3	✓	✓	✓	✓	✓	√	2	
	Involvement in cases of corruption	1									
	Involvement in technology transfer program or projects	1									
Technology development	Engagement in the development of efficient and environmental sound technologies	1	1	✓	✓	(√)	✓	-	✓	1	
	Investments in technology development/technology transfer	1									

Table 13 shows that, with regards to the **Local Community**, the behaviour is variable. Indeed, the society behaves well regarding the delocalization and migration (the company does not contribute directly or indirectly to migration of individuals); the local employment (it has policies on local hiring preferences, contributing to the reduction of local unemployment); the access to immaterial resources (it organizes community education initiatives, especially with universities, and guarantees freedom of expression of the local community); the safe and healthy living conditions, being committed in strengthening community health and minimizing the environmental pollution and having policies/regulations for safety; the secure living conditions, since no causalities and injuries are ascribed to the company. For these subcategories, also the national data indicates good performances. Nevertheless, the company does not respect cultural customs and traditions and, even if it supports community initiatives and collaborates with the community stakeholders, national data are not good (e.g. the public trust on politicians is very low). A moderate behaviour is related to the access to material resources, in terms of the commitment in minimizing the resources consumption and infrastructures improvements.

With regards to the **Value Chain Actors**, the behaviour is variable. Intellectual property rights are respected (i.e. policies and practices with regards to the respect of intellectual property rights are present); supplier relationships are good, considering the absence of coercive communication, the sufficient lead time, the reasonable volume fluctuation and the payments on time. However, regarding the fair competition, even if the employees are aware of the importance of compliance with competition legislation and fair competition, no documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour are present. Moreover, with respect to the promotion of social



responsibility, the organization does not audit the suppliers with regard to social responsibility, nor written policies exist regarding the integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures.

Also regarding the **Consumers**, the behaviour is variable. Indeed, on one hand, consumers health and safety is guaranteed through the presence of management measures to assess it; clear information is made to enable the consumer choice and internal management systems ensure that clear information is provided to consumers on end-of-life options; and consumer privacy is protected so that no consumer complains related to breach of privacy or loss of data occurred. On the other hand, no practices related to customer satisfaction, including results of surveys measuring customer satisfaction, and no written policies regarding a transparent communication on the product and social responsibility exist.

The interest of the External Partner with respect to the **Workers** is good, but the national data on one indicator negatively influences the final stakeholder category score. Freedom of association & collective bargaining is guaranteed; child and forced labour are not present; salary is fair (no suspicious deductions on wages are present, workers payments are regular and documented, wage levels ensure a decent standard of living); working hours are fair; equal opportunities are guaranteed, through the absence of any kinds of discrimination and the presence of formal policies on equal opportunities. Nevertheless, basic social benefits are provided to the worker; but mainly, with respect to workers health and safety, the national occupational accident rate is high when related to the national population, even if no injuries or fatal accidents happened in the company and an adequate management system for health and safety is present.

Regarding the **Society**, the performance is quite good, even if one subcategory negatively influences the final stakeholder score. The company contributes to economic development through different aspects and, regarding the technology development, it is involved in technology development/ technology transfer projects and programs, it invests in technology development/ technology transfer and it is engaged in the development of efficient and environmental sound technologies. Nevertheless, no publicly available documents as promises or agreements on sustainability issues are present and, even if the company is not involved in any case of corruption, no written policies exist regarding the formalized commitments of the organization to prevent corruption/presence of an anti-corruption program.

It can be concluded that, from the PA evaluated for each subcategory and each stakeholder, it derives that the total Impact Assessment IA of the present External Partner is equal to 4 on a scale from 1 (positive effect) to 6 (very negative effect).

4.2 Results and recommendations

As done for the companies discussed in the previous subsections, the S-LCA is performed for each company involved in one or more Continental HYBUILD system life cycle stage(s). Once the Performance Assessment and the Impact Assessment are performed for all the companies indicated in Table 11, firstly, an average is evaluated for each life cycle stage, and, finally, the overall IA of the Continental HYBUILD System can be evaluated as the total average.



Therefore, the Total Social Impact evaluated for the Continental HYBUILD system is 3.93, on a scale from 1 (positive effect) to 6 (very negative effect), as reported in Table 14.

Table 14. Social Impact of the Continental HYBUILD system

	S-LCA Resu	lts - Cont	inental H	IYBUILD	System			
		A1-A3	A4-A5	В4	C1	C2	C3	C4
	DC-BUS							
nents	Compression DC-driven Chiller – Heat Pump Master controller Batteries		0.5	2.5			_	_
Components	High temperature latent heat thermal energy storage	3	2.5	3.5	4	4.5	5	5
	Sensible heat storage (decentralized PINK tank)							
	TOTAL Social Impact				<u>3.93</u>			

The results indicate that the Continental HYBUILD system has a lightly negative effect, it can be still be socially accepted, but some social improvements are needed. Results similar to the ones of the Mediterranean system can be observed. Indeed, also in this case, the first life cycle stages of the system provide a lower social impact, whilst the EoL stages provide high social impacts, contributing to the social worsening of the entire system life cycle. In particular, in the production stage, the average of the impacts related to the single stakeholders is around 3 for all the components considered. This means that the social behaviour is almost equal with respect to the stakeholders categories. For the other stages, indeed, there is not a homogeneous behaviour with regards to the stakeholder categories, which can also vary from 2 to 4.5. Generally, the lowest impacts are related to the value chain actors category. Therefore, the highest contributions to the S-LCA impacts in the EoL stages are related to the "local community", "consumers", "workers" and "society" stakeholder categories. Again, it can be notices that the companies involved in the EoL stages are outside the HYBUILD consortium; therefore, if the EoL stages are performed by other companies, this could lead to a better overall social life cycle assessment result.



5 Additional considerations

5.1 Impact of the country data

As previously highlighted, the questionnaires include some country specific data that, in some cases, have a specific influence on the overall assessment of the social impacts, therefore the analyses have been updated excluding the contributions of such country data.

The results of such analysis for the Mediterranean HYBUILD system are summarized in Table 15 and show a slight decrease of the overall social impacts but confirm the heaviest impacts deriving from the EoL stages.

Table 15. Social Impact of the Mediterranean HYBUILD system

	S-LCA Results - Medit	terranean	HYBUILD) Syste	em			
		A1-A3	A4-A5	В4	C1	C2	С3	C4
	DC-Bus							
	Master controller							
	Batteries							
Components	Low temperature latent heat thermal energy storage							
od .	Solar field of Fresnel collectors	3.25	3	3.33	3	4	5	5
υo	Heat pump							
O	Sorption storage (sorption module + evaporator condenser)							
	Sensible heat storage (decentralized PINK tank)							
	TOTAL Social Impact			3.80	<u>)</u>			

Also for the Continental system, the questionnaires include some country specific data that, in some cases, have a specific influence on the overall assessment of the social impacts, therefore the overall analysis has been updated excluding the contributions of such country data.

The results of such analysis are summarized in Table 16.

Table 16. Social Impact of the Continental HYBUILD system

	S-LCA Resul	ts - Cont	inental H	YBUILD	System			
		A1-A3	A4-A5	B4	C1	C2	C3	C4
	DC-BUS							
nts	Compression DC-driven Chiller – Heat Pump Master controller							
Components	Batteries High temperature latent heat thermal energy storage	2.83	2	3	3	4	5	5
	Sensible heat storage (decentralized PINK tank)							
	TOTAL Social Imp	<u>act</u>			<u>3.55</u>			

In the case of the Continental System, the national data bear a mayor share of social impacts, in fact the results show a decrease of the social impacts on all the initial stages while confirming the heaviest impacts deriving from the EoL stages also for the Continental HYBUILD system.



5.2 Impact of the company dimension

Another analysis has been performed taking into account the company dimension: the different indicators giving the heaviest Social Impacts have been analysed taking into account the Questionnaires provided by the SMEs and by the Large Enterprises.

The results highlight that SMEs usually have higher social Impacts than Large Enterprise and also that SMEs have high Social Impacts on the basis of the same Sub Categories and usually of the same indicator or set of indicators.

In the case of the **Local Community** Stakeholder Category the Sub Categories with the higher impact for SMEs are the ones related to <u>Community Engagement</u>, <u>Local Employment</u> and <u>Access to material resources</u>: analysing the answers to the questionnaires, the reasons of such high impact is usually due to the fact that SMEs do not usually have formal involvement on issues such as <u>meetings</u> with <u>community</u> <u>stakeholders</u>, or <u>Organizational</u> <u>support</u> (<u>volunteer-hours</u> or <u>financial</u>) for <u>community</u> <u>initiatives</u>, either they do not have the necessary economic strength or time to be involved in local initiatives or they do it in an informal, not structured, way.

Other Indicators with heavy impacts for the SMEs are the ones related to *organizational risk* assessment for material resource conflict or to the participation in *infrastructures improvements*; also in this case the high impacts are related to the lower economic strength of SMEs.

In the case of the **Value Chain Actors** Stakeholder Category the Sub Categories with the higher impact for SMEs are the ones related to *Fair competition* and *Social Responsibility*: analysing the answers to the questionnaires, the reasons of such high impact is usually due to the lack of explicit codes of conduct or to the lack of a formal company policy on such issues more than on the lack of Fair Competition or of real Social Responsibility.

In the case of the **Consumers** Stakeholder Category the Sub Categories with the higher impact for SMEs are the ones related to <u>Feedback mechanism</u> and <u>Transparency</u>: analysing the answers to the questionnaires, the reasons of such high impact is, also in this case, the lack of explicit mechanism or codified measures to receive feedback from customers or the lack of Certification labels and related communication. In this case probably the improvements are possible also in small enterprises through an increased awareness on sustainability issues and with an external support by expert advisor.

In the case of the **Workers** Stakeholder Category the Sub Categories with the higher impact for SMEs are the ones related to <u>Equal opportunities/discrimination</u> and <u>Composition of governance bodies</u>: analysing the answers to the questionnaires, the reasons of such high impact is the lack of formal policies that, in some cases, Large Enterprises formally include in their codes of conduct.

In the case of the **Society** Stakeholder Category the Sub Category with the higher impact for SMEs is the one related to <u>Corruption</u>: analysing the answers to the questionnaires, the reasons of such high impact is the lack of a formalized commitment of the organization to prevent corruption.



6 Conclusions

In the present deliverable, the Social Life Cycle Assessments of the Mediterranean and the Continental HYBUILD system have been performed, in order to provide the social impacts generated by the systems during each step of their life-cycle. These results, together with the Life Cycle Assessment (LCA) and the Life Cycle Costing (LCC), complete the sustainability assessment, aiming to give an overall sustainability vision of the developed systems.

Firstly, an introduction has been made in order to describe the aim of this work and indicate the contributions of the consortium partners.

Then, the methodology for the S-LCA has been described with regards to the S-LCA UNEP/SETAC "Guidelines for Social Life Cycle Assessment of products" [1] [2], the Impact Assessment methodology developed by Ciroth et al. [5] and the main international standards ISO 14040: 2006 [3] e ISO 14044: 2006 [4].

The assessment has been performed with the help of internal and external partners, who compiled an S-LCA questionnaire prepared for the collection of the social data. The questionnaire is related to specific themes of social interest, the so called "subcategories", which are classified with respect to the different stakeholders involved in the systems life-cycle stages. According to the S-LCA [1] and the Impact Assessment [5] methodologies, the social performances (PA) of all involved companies have been evaluated. The PAs have been then converted in social impacts (Impact Assessment, IA), considering the six impact categories, the relation criteria among the subcategories and the impact categories, their correlation and, finally, the PA-to-IA conversion rules.

The final score, assessed for each company, has been initially evaluated for the single stakeholder group, as the average assessment for each subcategory and, at the end, for the entire company, as the average assessment for each stakeholder.

In addition to these considerations, another important rule has been applied: in case the average assessment is lower than the worse score minus 1, the latter is considered.

This rule is applied in order not to weaken the effects of very negative impacts.

Finally, the scores of all the companies are then reported in a table for each systems life cycle stage (Table 10 and Table 14) as the average of all the components and companies, in order to guarantee the confidentiality relationships among STRESS, who collected the social data, and the involved partners. A last average considering each step of the systems life cycle is then evaluated, being the final S-LCA score, ranging from 1 (positive effect) to 6 (very negative effect).

From the social life cycle assessment, similar conclusions can be made for both the Mediterranean and the Continental HYBUILD systems.

Indeed, the social life cycle impact of the Mediterranean system is equal to 4.06, while the impact of the Continental systems is equal to 3.93 for the Continental system, considering a scale ranging from 1 (positive effect) to 6 (very negative effect).

Going in detail, it can be underlined that the initial life-cycle stages, i.e. the production, the installation and the replacement stages, have a better social impact, compared to the End-of-Life stages. This observation has a positive effect on the overall S-LCA because the EoL companies involved in the assessment are from outside the HYBUILD consortium and have been asked to collaborate have not really participated in the project.

It can also be observed that the social behaviour is homogeneous among the stakeholder categories when the production stage is considered; whilst, for the other life-cycle stages, the behaviour towards the Value Chain Actors is always better than the behaviour towards the other



stakeholder categories, meaning that, for reducing the social impacts in the installation, use and EoL stages, improvements are needed towards the following stakeholder categories: local community, consumers, workers, society.

A further analysis has been performed to understand country specific data effects on the SLCA Impact Assessment, in both Mediterranean and Continental Systems. The single company questionnaires were analysed excluding the assessment scores related to the specific countries. In both cases a decrease on the overall impacts has been achieved, meaning that the impacts of the companies involved in the HYBUILD project are negatively influenced by the countries in which there are established.

Another analysis, based on the company dimension, has highlighted that in most cases the Social Impacts of SMEs is negatively influenced not directly by their negative behaviours but by the lack of adoption of formal policies related to specific Stakeholder Categories or Sub Categories.

Finally, it can be concluded that the results here described are useful in case a social improvement is requested, because they provide information on how and where to intervene in order to reduce the overall social impacts.



References

- [1] UNEP SETAC Life Cycle Initiative Guidelines for Social Life Cycle Assessment of Products, United Nations Environment Programme, 2009
- [2] UNEP SETAC Life Cycle Initiative The methodological sheets for sub-categories in Social Life Cycle Assessment (S-LCA), United Nations Environment Programme and SETAC, 2013
- [3] ISO 14040:2006 "Environmental management Life cycle assessment Principles and framework"
- [4] ISO 14044:2006 "Environmental management Life cycle assessment Requirements and guidelines"
- [5] A. Ciroth and J. Franze, LCA of an Ecolabeled Notebook: Consideration of Social and Environmental Impacts Along the Entire Life Cycle. Lulu. com, 2011
- [6] UNEP, 2020. Guidelines for Social Life Cycle Assessment of Products and Organizations 2020. Benoît Norris, C., Traverso, M., Neugebauer, S., Ekener, E., Schaubroeck, T., Russo Garrido, S., Berger, M., Valdivia, S., Lehmann, A., Finkbeiner, M., Arcese, G. (eds.). United Nations Environment Programme (UNEP)
- [7] EN 15978:2011 "Sustainability of construction works Assessment of environmental performance of buildings Calculation method"
- [8] ISO 26000:2010 Guidance on social responsibility



Annex – Social Life Cycle Impact Assessment of the companies involved in the HYBUILD systems life-cycle stages

The following figures show the IA of each company involved in both the HYBUILD systems life-cycle stages. In order to assure the confidentiality, the companies replies are omitted, together with the identification of the company for each IA assessment and result.

Table A1. S-LCA Final scores of each company

Company	S-LCA Final Score
Internal Partner 1	3
Internal Partner 2	4
Internal Partner 3	3
Internal Partner 4	5
Internal Partner 5	2
Internal Partner 6	3
Internal Partner 7	3
Internal Partner 8	4
Internal Partner 9	3
Internal Partner 10	2
External Partner 1	3
External Partner 2	4
External Partner 3	5



						lm	pac	t Ca	ateg	ories			
Stakeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	w	СН	S H	НR	SER	IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	4										
	Delocalization and	Direct or indirect contribution of the organization to migration of individuals	2										
	Migration	Number of individuals who resettle, voluntarily or involuntarily, because	-	3	1	(*	()	✓)	✓	1	(√)	3	
		of the organization Strength of organizational procedures for integrating migrant workers into the community	1										
		Public Trust on Politicians	1										
	Community	Strength of written policies on community engagement at organization	-	-	l.,								
	engagement	level Diversity of community stakeholder groups that engage with the	1	2	(~	ľ	(,	~)	•	(✓)	1	1	
		organization Number of meetings with community stakeholders	1	-									
		Organizational support (volunteer-hours or financial) for community		-									
		initiatives	2			+	+	-					
		Unemployment Statistics by Country	1	-									
		Poverty and Working Poverty by Country	-										
	Local employment	Percentage of workforce hired locally	-	2	~	(~	()	√)	✓	1	1	1	
		Strength of policies on local hiring preferences (organization-specific indicator)	1										
		Presence of policies on spending on locally-based suppliers	3										
nity		Percentage on spending on locally-based suppliers		-									
.ocal Community		Patent Filings	1			T	Ť	T					
2													2
Poca	Access to immaterial resources	Annual arrests connected to protests of organization actions Do policies related to intellectual property respect moral and economic	1	1	(~) (~) ,	✓	✓	(✓)	1	1	
		rights of the community?	1										
		Presence/strength of community education initiatives	1			+	+	_		_			
		Strength of organizational risk assessment with regard to potential for material resource conflict	2										
	Access to material	Does the organization engage with local community over sustainable methods for sharing resources?	2	2		(~	۱.	/	/	/	(✓)	2	
	resources	Does the organization have a certified environmental management system	1	-			1			ľ	(-)		
		Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects?	3										
		Burden of Disease by Country	1										
	Safe and health	Pollution Levels by Country	1										
I	living conditions	Does the organization measure air/water/earth pollution?	1	1	~	1	1	✓	✓	(√)	(√)	1	
		Presence/Strength of Laws on Construction Safety Regulations	1				1			ĺ	1		
		Management oversight of structural integrity Organization efforts to strengthen community health (e.g. through shared	-							1			
		community access to organization health resources)	1							1			
	-	Management effort to minimize use of hazardous substances	1			+	+	+		┢	H		
		Strength of Public Security in Country of operation	1										
	Secure living conditions	Management policies related to private security personnel	3	2	(~) ~	1	~	(✓)	(✓)	(√)	2	
		Number of legal complaints per year occurred against the organization with regard to security concerns	1										
		Number of causalities and injuries per year ascribed to the organization	1			L	1						
	1	Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	2								1		
ح		Employee awareness of the importance of compliance with competition	1										
Actor	Fair competition	legislation and fair competition. Legal actions pending or completed during the reporting period regarding		2	1	1	1	✓	✓	-	1	1	
Value Chain Actors		anti-competitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has been identified as a participant	1										2
Val	Respect of intellectua	General intellectual property rights and related issues associated with the	1		Γ	Γ	Τ	Т		Γ			
	property rights	Organization's policy and practice with regards to the respect of	1	1	(√) -		-	✓	-	1	2	
		intellectual property rights								_			



		Evidence of Country non respect or support to Freedom of association and										
		Collective bargaining	1									
		Evidence of restriction to Freedom of association and Collective bargaining	1									
	Freedom of											
	association &	Presence of unions within the organization is adequately supported	1	1	1	~	′ •	· /	1	✓	1	
	collective bargaining	Workers are free to join unions of their choosing	1	_								
		Employee/union representatives are invited to contribute to planning of larger changes in the company, which will affect the working conditions	1									
		Workers have access to a neutral, binding and independent dispute		_								
		resolution procedure	1									
		Percentage of children working by country and sector	1									
	Child labour	Absence of working children under the legal age or 15 years old	1		/		/ ,		/	1		
	Child labour	Children are not performing work during the night	1	1	ľ	*	Ίľ	*		•	1	
		Records on all workers, stating names, ages and date of birth are kept on	1									
						T	T					
		Minimum wage by country	-									
	Fair salary	Percentage of workers receiving the lowest paid	1	1	1	(~	7			1	1	
	,					ľ	1					
		The lowest paid workers are considering their wages meets their needs	1									
		Presence of suspicious deductions on wages	1	_								
		Regular and documented payment of workers	-			+	+	+	+	\vdash		
		Maximum number of working hours	1				1		1			
		Number of hours effectively worked by employees (at each level of employment)	1				1					
	Working hours	Number of holidays effectively used by employees (at each level of employment).	1	1	✓		/ /	· /	-	~	1	
		Respect of contractual agreements concerning overtime	1				1		1			
		Clear communication of working hours and overtime arrangements	1				1					
		The organization provides flexibility	1			1	┸	+	1	\sqcup		
							1					
		Women in the Labour force participation rate by country	2				1					
٧									1			
Worker				4								3
>		Country gender index ranking	1									
		Presence of formal policies on equal opportunities	1	-								
	Equal opportunities/discrim	Announcement of open positions happen through national/regional		2	/		/ /		1	1	1	
	ination	newspapers, public job databases on internet, employment services or other publicly available media ensuring a broad announcement	1									
		Total numbers of incidents of discrimination and actions taken	1									
		Composition of governance bodies and breakdown of employees per										
		category according to gender, age group, minority, group membership and other indicators of diversity	3									
		other mutators of diversity										
		Ratio of basic salary of men to women by employee category	3									
						+	+					
		O	5									
		Occupational accident rate by country	3									
		Number/percentage of injuries or fatal accidents in the organization by job	_									
		qualification inside the company	2									
		Presence of a formal policy concerning health and safety	1									
		Adequate general occupational safety measures are taken					- 1					
	Health and safety		1									
		Preventive measures and emergency protocols exist regarding accidents &		4	~		/ /		-	~	4	
		Preventive measures and emergency protocols exist regarding accidents & injuries	1	4	~	· •	/ /		-	~	4	
		Preventive measures and emergency protocols exist regarding accidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure	1	4	·		\ \ \		-	~	4	
		Preventive measures and emergency protocols exist regarding accidents. & injuries: Preventive measures and emergency protocols exist regarding pesticides and chemical exposure. Appropriate protective gear required in all applicable situation present.	1 1 1	4	•		/ /		-	~	4	
		Preventive measures and emergency protocols exist regarding accidents. 8. Injuries. Preventive measures and emergency protocols exist regarding pesticides and chemical exposure and chemical exposure protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and astus of violations.	1	4	*		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	· •	-	*	4	
		Preventive measures and emergency protocols exist regarding accidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations Education, training counselling, prevention and risk control programs in	1 1 1 1	4	~		\ \ \		-	*	4	
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	Social benefits/socia	Preventive measures and emergency protocols exist regarding accidents & injuries. Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present. Number of occupational safety and health administration violations reported within the past 3 years and status of violations. Education, training counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases. Social security expenditure by country and branches of social security (e.g. Health care, sickness, maternity) List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education,	1 1 1 1 1 1 1	2	~					(*)	•	
	Social benefits/socia security	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations floation to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. healthcare, sidness, maternity) List and provide short description of social benefits provided to the	1 1 1 1 1	2							1	
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	security Public commitments	Preventive measures and emergency protocols exist regarding accidents & injuries. Preventive measures and semergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present. Number of occupational safety and health administration violations reported within the past 3 years and status of violations. Education, training counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases. Social security expenditure by country and branches of social security (eg. Health care, sickness, maternity) List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues. Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders.	1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1	2		~		· ·	~	(>)	,	
	security Public commitments	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations floated to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sichness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises	1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1	2		~		· ·	~	(>)	,	
	security Public commitments	Preventive measures and emergency protocols exist regarding acidents & injuriers Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations in place to assist workfarce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, persion fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or agreements by research of proper presence of problems of the organization by the local community or other stakeholders Persence of mechanisms to follow-up the realisation of promises is the organization doing business in a region with ongoing conflicts?	1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1	2		~		· ·	~	(>)	,	
	security Public commitments	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations in place to assist workfarce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, persion fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or agreements but of the presence of problems of the organization by the local community or other stakeholders Persence of mechanisms to follow-up the realisation of promises is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits:	1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 1 1 1 1	2		~		· ·	~	(>)	,	
	Public commitments to sustainable issues	Preventive measures and emergency protocole exist regarding acidents & injuries Preventive measures and emergency protocole exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations floated to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sidness, maternity) Lust and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving pald time-off Persence of publicy available documents as promises or agreements on sustainability issues Complaints issues Presence of publicy available documents as promises or agreements by the organization by the local community or other stakeholders Presence of publicy available size in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector that features are conflicts (e.g. where the depletion of resources allows significant profits or conflicts (e.g. where the depletion of resources allows significant profits or the conflicts (e.g. where the depletion of resources allows significant profits or the conflicts (e.g. where the depletion of resources allows significant profits or the conflicts (e.g. where the depletion of resources allows significant profits or the conflicts (e.g. where the depletion of resources allows and the conflicts (e.g. where the depletion of resources allows and the conflicts (e.g. where	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	\(\sigma\)	· · · ·	n -	(~	· · ·	(<)	,	
>	Public commitments to sustainable issues	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safely and health administration violations reported within the past 3 years and status of violations Education, training counselling, prevention and risk control programs in place to assist volvitors emethers, their families or community members place to assist volvitors emethers, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (eg. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicity available documents as promises or agreements on sustainability suceriated to the non-fulfilment of promises or agreements to the organization doing business in a region with organization of orbits skeholders Percentage of mechanisms to follow-up the realisation of promises is the organization doing business in a sector otherwars linked to the the report of the sector of the state resilience of the the processor of the sector of the state in lakes to the the sector of the conflicts (e.g. where the depletion of resources allows significant profits extractive industries, forestry, fishery)?	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	\(\sigma\)	· · · ·		(~	· · ·	(<)	,	
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Southy	Public commitments to sustainable issues	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations in place to assist workfarce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, persion fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or complaints issued related to the non-fulfilment of promises or agreements by the organization doing business in a sector other statures linkages to conflicts (e.g. where the depletion of resources allows significant profits extractive industries, forestry, fisheny)? Is the organization doing business in a sector otherwise linked to the scalation or de-escalation by trade for foliolic fundations; and sector otherwise linked to the scalation or de-escalation by trade folionic de-ordific tescalation by massive polition, de-escalation by trade folionic de-ordific tescalation by massive polition, de-escalation by trade folionic de-ordific tescalation by massive political de-ordifications.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	\(\sigma\)	· · · ·	n -	(~	· · ·	(<)	,	2
South	Public commitments to sustainable issues Prevention annitigation of conflicts	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations floated to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sichness, maternity) Lust and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Personace of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders stee organization doing business in a sector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits extractive induction, de-exclation of of onlicits in a sector otherwise linked to the constraints of the calculation of the exclasion of organization is not be the development of conflicts? Is the organization doing business in a sector the features linkages to conflicts (e.g. where the depletion of resources allows significant profits extractive induction, de-exclation of oten the development of conflict boundaries)? Organization's related to the other of conflicts of conflicts to the other of conflicts of conflicts to the other of conflicts of the other ot	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2)) (~	0 -	(*	· · · · · · · · · · · · · · · · · · ·	(5)	,	2
South	Public commitments to sustainable issues Prevention and mitigation of conflicts Contribution to Economic	Preventive measures and emergency protocols exist regarding acidents. & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations. Education, training, counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding, serious diseases. Social security expenditure by country and branches of social security (eg. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percontage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Compolants issued related to the non-fulfilment of promises or agreements but the organization by the local community or other stakeholders Persence of mechanisms to follow-up the realisation of promises is the organization doing business in a sector otherwise linked to the escalation or de-escalation of conflicts (eg. where the depletion of resources allows significant profits extractive industries, forestry, fishery)? Organization's role in the development of conflicts Occupated products	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2)) (~	n -	(*	· · · · · · · · · · · · · · · · · · ·	(5)	,	2
Society	Public commitments to sustainable issues Prevention an mittgation of conflicts Contribution to	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations place to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sichness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under liabour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders is the organization doing business in a sector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits - articative industries, forestry, fishers, forestry, fishers in a sector otherwise linked to the conflicts (e.g. where the depletion of resources allows significant profits - articative industries, forestry, fishers in a sector otherwise linked to the conflicts (e.g. where the depletion of resources allows significant profits - articative industries, forestry, fishers in the development of conflicts Disputed products Economic situation of the country/region (GDP, economic growth, unemployment,)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2)) (~	0 -	(*	· · · · · · · · · · · · · · · · · · ·	(5)	,	2
Attoos	Public commitments to sustainable issues Prevention and mitigation of conflicts Contribution to Economic	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations place to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sichness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Eddence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Persence of publicy available documents as promises or agreements on sustainability issues Complaints issues Complaints issues Presence of mechanisms to follow-up the realisation of promises or agreements by the organization by the local community or other stakeholders state organization doing business in a sector otherwise linked to the complication of promises or agreements on the organization doing business in a sector otherwise linked to the conflicts (e.g. workfire scalation of versions of the country/region (GDP, economic growth, unemployment,) Contribution of the organization contribute to the economic growth, unemployment,)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2)) (~	0 -	(*	· · · · · · · · · · · · · · · · · · ·	(5)	,	2
Association	Public commitments to sustainable issues Prevention an mitigation of conflicts Contribution to Economic Development	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safely and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations seducation, training counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sichness, maternity) Lust and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Persence of publicy available documents as promises or agreements on sustainability issues Complaints issues Complaints issues Sumplaints in the past of the properties of the complaints of the properties of the organization doing business in a sector that features linkages to conflicts (e.g. worker depleted on features linkages to conflicts (e.g. worker depleted on features linkages to conflicts (e.g. conflict scalation by massive polition, de-esclation of year beginner of conflicts (e.g. conflict scalation by massive polition, de-esclation of the development of conflicts (e.g. conflict scalation by massive polition, de-esclation by trade byton donlift to the escalation of the organization of the country/region (GDP, economic growth, unemployment,) Contribution of the organization contribute to the economic progress Sector efforts in technology development	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	(*))) (~	0 -	(~	(~	(5)	,	2
Assocs	Public commitments to sustainable issues Prevention and mitigation of conflicts Contribution to Economic	Preventive measures and emergency protocols exist regarding acidents & Injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations regarding serious diseases Social security expenditure by country and branches of social security (e.g. healthcare, sidness, maternity) List and provide short description of social benefits provided to the workers (e.g. health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Presence of publicly available documents as promises or agreements on sustainability issues Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or other stakeholders is the organization doing business in a sector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits extractive industries, forestry, fishers, forestry, fisher	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2)) (~	0 -	(~	(~	(5)	,	2
Society	Public commitments to sustainable issues Prevention annitigation of conflicts Contribution to Economic Development Technology	Preventive measures and emergency protocols exist regarding acidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure Appropriate protective gear required in all applicable situation present Number of occupational safely and health administration violations reported within the past 3 years and status of violations reported within the past 3 years and status of violations seducation, training counselling, prevention and risk control programs in place to assist workforce members, their families or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sichness, maternity) Lust and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations. Percentage of permanent workers receiving paid time-off Persence of publicy available documents as promises or agreements on sustainability issues Complaints issues Complaints issues Sumplaints in the past of the properties of the complaints of the properties of the organization doing business in a sector that features linkages to conflicts (e.g. worker depleted on features linkages to conflicts (e.g. worker depleted on features linkages to conflicts (e.g. conflict scalation by massive polition, de-esclation of year beginner of conflicts (e.g. conflict scalation by massive polition, de-esclation of the development of conflicts (e.g. conflict scalation by massive polition, de-esclation by trade byton donlift to the escalation of the organization of the country/region (GDP, economic growth, unemployment,) Contribution of the organization contribute to the economic progress Sector efforts in technology development	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2	(*))) (~	0 -	(~	(~	(5)	,	2

Figure A1. S-LCA Impact Assessment of Internal Partner 1 – FINAL SCORE 3



			1	Darfarrana A		Imp	act (Cate	gori	es		
takeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	wc	HS	HR	SE	RI	R G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	3									
		Direct or indirect contribution of the organization to migration of individuals	4									
	Delocalization and Migration	Number of individuals who resettle, voluntarily or	-	4	ľ	(√)	(✓)	′	١.	(*) 4	
		involuntarily, because of the organization Strength of organizational procedures for integrating migrant	_									
		workers into the community			H			H		+		
		Public Trust on Politicians	2									
		Strength of written policies on community engagement at										
	Community engagement	organization level Diversity of community stakeholder groups that engage with	-	5	(')	1	(~)	/	(1	6	
		the organization	-									
		Number of meetings with community stakeholders	6									
		Organizational support (volunteer-hours or financial) for community initiatives	1									
		Unemployment Statistics by Country	1									
		Poverty and Working Poverty by Country	1									
	Local employment	Percentage of workforce hired locally	1	2	~	(✔)	(✓)	·	١,	1	1	
		Strength of policies on local hiring preferences (organization- specific indicator)	2									
	1	Presence of policies on spending on locally-based suppliers	2					1				
		Percentage on spending on locally-based suppliers	3					L	1			
ni ty		Patent Filings	1									
Сотти	Access to immaterial resources	Annual arrests connected to protests of organization actions	1	1	(v)	(√)	/	/		7	1	5
Local Co	needs to minute full testines	Do policies related to intellectual property respect moral and economic rights of the community? Presence/strength of community education initiatives	-	•	()	. ,						
		Strength of organizational risk assessment with regard to	5					T	T	T		
		potential for material resource conflict Does the organization engage with local community over	1									
	Access to material resources	sustainable methods for sharing resources? Does the organization have a certified environmental		4		(')	/	/	٠,	(4	
		management system	2									
		Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects?	2									
		Burden of Disease by Country	1									
		Pollution Levels by Country	1									
	Safe and healthy living conditions	Does the organization measure air/water/earth pollution? Presence/Strength of Laws on Construction Safety Regulations	-	1	✓	~	~	'	(() (<	1	
		Management oversight of structural integrity	-	-								
		Organization efforts to strengthen community health (e.g. through shared community access to organization health resources)	1									
		Management effort to minimize use of hazardous substances	-					H	+	+		
	1	Strength of Public Security in Country of operation	1					1				
	Secure living conditions	Management policies related to private security personnel	1	1	(✓)	/	1	(~) (-) (×	1	
		Number of legal complaints per year occurred against the organization with regard to security concerns	1		ľ			ľ	ľ	ľ		
	1	Number of causalities and injuries per year ascribed to the organization	-					1				
		Organization Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	5					l	İ			
	Fair competition	Employee awareness of the importance of compliance with competition legislation and fair competition.	1	4	1	/	/	/	١.		4	
		Legal actions pending or completed during the reporting period regarding anti-competitive behaviour and violations of anti-			ľ	ľ		ľ		ľ		
		trust and monopoly legislation in which the reporting	1									
		organization has been identified as a participant General intellectual property rights and related issues	_		H	H	Н	t	$^{+}$	t		
	Respect of intellectual property rights	Organization's policy and practice with regards to the respect of	-	-	(✓)	-	-	\ \	1	. /	-	
Actors		intellectual property rights Absence of coercive communication with suppliers	-		H	H	H	+	+	+		
hain A	Supplier relationships	Sufficient lead time Reasonable volume fluctuations		1	(✓)	(~)	(~)	1	١.		1	5
Value Chain		Payments on time to suppliers	1		L	L	L	L	1	1		
N _a		Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers	5	-								
	1	Percentage of suppliers that the organization has audited with						1				
	Promoting social responsibility	regard to social responsibility along the supply chain Membership in initiatives that promotes social responsibility	-	5	~	1	/	(~) (7	6	
		along the supply chain Integration of ethical, social, environmental and gender-	-					1				
		equality criterions in purchasing policy, distribution policy and contract signatures	-									
		Support to suppliers in terms of consciousness-raising and	-					1				
	1	counselling concerning the social responsibility issues	· -			1	i .	1	- 1	- 1		



		Presence of consumer complaints (at national, sectorial,	,				П	-1	_		
		organizational level) Quality of or number of information/signs on product health	1								
	Health and safety	and safety Presence of consumer complaints (at national, sectorial,	1	1	-	~	(✓)	~		1	
		organizational level) Presence of management measures to assess costumer health and safety	1								
		Presence of labels of health and safety requirements Presence of a mechanism for customers to provide feedback	1								
	Feedback mechanism	Management measures to improve feedback mechanisms Practices related to customer satisfaction, including results of	1	1	(✔)	(~)	~	~		1	
		surveys measuring customer satisfaction	-						-		
		Country ranking related to regulations on data-sharing	1								
Consumers	Consumer privacy	Strength of internal management system to protect consumer privacy	-	1		_	~	(~)	. 1	1	4
Cons	,	Number of consumer complains related to breach of privacy or loss of data within the last year	1					()			•
		Number of complaints by regulatory bodies related to breach on consumer privacy or loss of data within the last year	1								
		Presence of a law or norm regarding transparency	1								
		Non-compliance with regulations regarding transparency Consumers complaints regarding transparency	1 1								
	Transparency	Publication of a sustainability report Communication of the results of social and environmental life	5	4	(√)	~	~	1	<) <	5	
		cycle impact assessment Certifications/labels the organization obtained for the product	5								
		under investigation Do internal management systems ensure that clear information	3		H			_			
	End-of-Life Responsibility	is provided to consumers on end-of-life options? Annual incidents of non-compliance with regulatory labelling	1	1	✓	~	~	✓	1 1	1	
		requirements in one year? Evidence of Country non respect or support to Freedom of							+		
		association and Collective bargaining Presence of unions within the organization is adequately	1								
		supported	1								
	Freedom of association & collective bargaining	Workers are free to join unions of their choosing	1	4	~	~	~	~	1 1	5	
		Employee/union representatives are invited to contribute to planning of larger changes in the company, which will affect the working conditions	5								
		Workers have access to a neutral, binding and independent dispute resolution procedure	1								
		Living Wages	1					1			
	Fair salary	Minimum wage by country Percentage of workers receiving the lowest paid	1	1	·	(√)	~	~	- /	1	
		The lowest paid workers are considering their wages meets their needs	1	-							
		Presence of suspicious deductions on wages Regular and documented payment of workers	1 1								
		Maximum number of working hours	1								
		Number of hours effectively worked by employees (at each level of employment)	1								
	Working hours	Number of holidays effectively used by employees (at each level of employment).	1	1	~	~	~	✓	- 🗸	1	
		Respect of contractual agreements concerning overtime Clear communication of working hours and overtime	1								
		arrangements The organization provides flexibility	1								
		Percentage (estimate) of forced labour by region	2								
		Workers voluntarily agree upon employment terms Employment contracts are comprehensible to the workers and	1								
		are kept on file Employment contracts stipulate wage, working time, holidays	1	_	١.						
	Forced labour	and terms of resignation Birth certificate, passport, identity card, work permit or other		1	~	~	✓	1	1 1	1	
		original documents belonging to workers are not retained or kept for safety reasons by the organization Workers are free to terminate their employment within the	1								
		prevailing limits Workers are bonded by debts exceeding legal limits to the	1								
Workers		employer Women in the Labour force participation rate by country	2								5
		Country gender index ranking	2								
		Presence of formal policies on equal opportunities	5								
	Equal opportunities/discrimination	Announcement of open positions happen through national/regional newspapers, public job databases on		4	1	1	~	~	< <	5	
		internet, employment services or other publicly available media ensuring a broad announcement Total numbers of incidents of discrimination and actions taken	1								
		Composition of governance bodies and breakdown of	1								
		employees per category according to gender, age group, minority, group membership and other indicators of diversity Ratio of basic salary of men to women by employee category	1								
		Occupational accident rate by country	5		Ī				Ť		
		Number/percentage of injuries or fatal accidents in the	4								
		organization by job qualification inside the company Presence of a formal policy concerning health and safety	1								
		Adequate general occupational safety measures are taken Preventive measures and emergency protocols exist regarding	1								
	Health and safety	accidents & injuries Preventive measures and emergency protocols exist regarding	1	4	~	1	~	~	- 🗸	4	
		pesticides and chemical exposure Appropriate protective gear required in all applicable situation present	1								
		Number of occupational safety and health administration violations reported within the past 3 years and status of	4								
		violations Education, training, counselling, prevention and risk control programs in place to assist workforce members, their families	1								
		or community members regarding serious diseases Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)	2								
	Social benefits/social security	List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care,	2	2	~	~	~	~	< (<	1	
		education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security laws and employment regulations.	1								
		Percentage of permanent workers receiving paid time-off	1								



		I- /			_	_	_		_	_		
		Presence of publicly available documents as promises or agreements on sustainability issues	-				Ιl		1	1		
		C					ll		1			
	Public commitments to sustainable	agreements by the organization by the local community or		1	(✓)	(V)	l - I	(✓)	١.	/	1	
	issues	other stakeholders					ll		1			
		Presence of mechanisms to follow-up the realisation of					ll		1			
		promises					Ш		╀	_		
Society	Contribution to Economic Development	Economic situation of the country/region (GDP, economic growth, unemployment, _)	1	1	~	(✓)	(✔)	<	(*) ~	1	1
		Contribution of the organization to the economic progress	1									
1		Sector efforts in technology development					П		Т	Τ		
1		Involvement in technology transfer program or projects	-		١. ١		ll		1	Ι.		
	Technology development	Partnerships in research and development	1	1	1	_	(✔)	1	1-	1	1	
		Investments in technology development/ technology transfer	1									

Figure A2. S-LCA Impact Assessment of Internal Partner 2 – <u>FINAL SCORE 4</u>

						lmį	pact C	ategor	ies			
Stakeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	wc	HS	HR	SER	IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		Unemployment Statistics by Country	1									
	Local employment	Poverty and Working Poverty by Country	1	4	_	(4)	(*)	_	,	*	4	
l		Percentage of workforce hired locally		~		()	1 '				7	
		Strength of policies on local hiring preferences (organization- specific indicator)	3									
		Presence of policies on spending on locally-based suppliers	3									
		Percentage on spending on locally-based suppliers	5									
£		Burden of Disease by Country	1									
Local Community		Pollution Levels by Country	1									3
ocal	Safe and healthy	Does the organization measure air/water/earth pollution?	1									
_	living conditions	Presence/Strength of Laws on Construction Safety Regulations	1	3	~	~	~	·	(~)	(✓)	3	
l		Management oversight of structural integrity	-									
		Organization efforts to strengthen community health (e.g. through shared community access to organization health resources)	4									
		Management effort to minimize use of hazardous substances	1									
		Strength of Public Security in Country of operation	2									
	Secure living conditions	Management policies related to private security personnel	3	2	(✓)	1	~	(√)	(√)	(√)	2	
		Number of legal complaints per year occurred against the organization with regard to security concerns	1									
		Number of causalities and injuries per year ascribed to the organization	1									
		Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being compiled in anticompetitive behaviour	1	1	√	·	*	√	-	*	1	
		Employee awareness of the importance of compliance with	1									
		competition legislation and fair competition. Legal actions pending or completed during the reporting period regarding anti-competitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has been identified as a participant	1									
Actors	Respect of intellectual property rights	Organization's policy and practice with regards to the respect of intellectual property rights	1	1	(✓)	-	-	~		1	2	
ain /		Absence of coercive communication with suppliers	1 3									3
Value Chain Actors	Supplier relationships	Sufficient lead time Reasonable volume fluctuations	2	2	(✓)	(*)	(*)	~	-	1	2	
Í		Payments on time to suppliers	1									
		Industry codes of conduct in the sector	1							t		
		Presence of an explicit code of conduct that protect human rights of workers among suppliers	1									
Í		Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	1									
	Promoting social responsibility	Membership in initiatives that promotes social responsibility	5	4	✓	~	~	(✓)	(✓)	~	4	
		along the supply chain Integration of ethical, social, environmental and gender- equality criterions in purchasing policy, distribution policy	1									
		and contract signatures Support to suppliers in terms of consciousness-raising and counselling concerning the social responsibility issues	5									



		Evidence of Country non respect or support to Freedom of association and Collective bargaining	1									
	association &	Presence of unions within the organization is adequately supported	1	1	~	~	/	1	1	1	1	
	collective bargaining	Workers are free to join unions of their choosing Employee/union representatives are invited to contribute to planning of larger changes in the company, which will affect the working conditions	1									
		Workers have access to a neutral, binding and indipendent dispute resulution procedure	1									
		Percentage of children working by country and sector Absence of working children under the legal age or 15 years old	1		,	/	1	1	1	1		
	Child labour	Children are not performing work during the night Records on all workers, stating names, ages and date of birth	1	1	ľ	ľ	ľ	ľ	ľ	•	1	
		are kept on file Minimum wage by country	1									
	Fair salary	Percentage of workers receiving the lowest paid The lowest paid workers are considering their wages meets	1	1	1	(✓)	/	,		/	1	
	Tun sulury	their needs Presence of suspicious deductions on wages	1	•		,					-	
		Regular and documented payment of workers	1									
		Maximum number of working hours	1									
		Number of hours effectively worked by employees (at each level of employment)	1	1	1	~	~	1	~	1	1	
		Number of holidays effectively used by employees (at each level of employment).	1									
		Respect of contractual agreements concerning overtime Clear communication of working hours and overtime	1									
		arrangements The organization provides flexibility	1									
		Percentage (estimate) of forced labour by region	2									
		Workers voluntarily agree upon employment terms Employment contracts are comprehensible to the workers and are kept on file	1									
	Forced labour	and are kept on file Employment contracts stipulate wage, working time, holidays and terms of resignation	1	2	1	1	1	/	1	1	1	
S		Birth certificate, passport, identity card, work permit or other original documents belonging to workers are not retained or kept for safety reasons by the organization Workers are free to terminate their employment within the	1									
Workers		prevailing limits Workers are bonded by debts exceeding legal limits to the	1									3
		employer Women in the Labour force participation rate by country	2									
		Country gender index ranking	2									
	Equal opportunities/discrim	Presence of formal policies on equal opportunities Announcement of open positions happen through	1	2	/	1	/	1	/	/	1	
	ination	national/regional newspapers, public job databases on internet, employment services or other publicly available media ensuring a broad announcement Total numbers of incidents of discrimination and actions	1									
		taken Composition of governance bodies and breakdown of employees per category according to gender, age group,	2									
		Ratio of basic salary of men to women by employee category	1									
		Occupational accident rate by country Number/percentage of injuries or fatal accidents in the	5									
		Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company Presence of a formal policy concerning health and safety	1									
	Health and safety	Adequate general occupational safety measures are taken Preventive measures and emergency protocols exist	1	4	1	_	_	/		1	4	
		regarding accidents & injuries Preventive measures and emergency protocols exist regarding pesticides and chemical exposure	1									
		Appropriate protective gear required in all applicable situation present	1									
		Number of occupational safety and health administration violations reported within the past 3 years and status of violations	-									
		Education, training, counselling, prevention and risk control p	1						H			
		Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)	2									
	Security	List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.)	2	2	1	✓	1	~	1	(✔)	1	
		Evidence of violations of obligations to workers under labour or social security laws and employment regulations.	1									
		Percentage of permanent workers receiving paid time-off	1									
	Public commitments to sustainable issues	Presence of publicly available documents as promises or agreements on sustainability issues	2	2	(✔)	(✓)	-	(✓)	-	~	2	
		Complaints issued related to the non-fulfilment of promises or agreements by the organization by the local community or	1									3
dety		other stakeholders										,
Society		Presence of mechanisms to follow-up the realisation of	1						1			
Society		Presence of mechanisms to follow-up the realisation of promises Sector efforts in technology development	-									
Society	Technology	promises		. 3	✓	·	(✓)	~	-	·	3	

Figure A3. S-LCA Impact Assessment of Internal Partner 3 – FINAL SCORE 3



Stakeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	Performance Assessment (PA)	wc	HS	HR	SEF	RIR	G	Impact Assessment (IA)	Impact Assessment (IA)
	Delocalization and Migration	International Migrants as a Percentage of Population	3	3	3	1	(~)	(~)) <i>~</i>	~	(~	3	3
		Public Trust on Politicians	2										
	Community engagement	Organization contribution to local development	1	2	5	(✔)	1	(~)) ~	(×) ~	1	6
		Diversity of community stakeholder groups that engage with the organization	1	_		, ,				ľ			
		Number of meetings with community stakeholders	-										
		Organizational support (volunteer-hours or financial) for community initiatives	- 6										
		Unemployment Statistics by Country	1								T		
Local Community		Poverty and Working Poverty by Country	1										
cal Co	Local employment	Percentage of workforce hired locally	2	5	5	~	(~)	(~)	·	~	~	6	6
3		Strength of policies on local hiring preferences (organization-	5 6										
		specific indicator) Presence of policies on spending on locally-based suppliers	6										
			6 5										
		Percentage on spending on locally-based suppliers	1				<u> </u>		١.	١.,	+		
	Access to immaterial resources	Patent Filings	1	1	1	(√)	(√)	·	_	(~) ~	1	1
	Safe and healthy living conditions	Burden of Disease by Country	1	1	1	1	1	1		1.) (~	1	1
		Pollution Levels by Country	1	-	1					(-	,,,,	•	1
	Secure living conditions	Strength of Public Security in Country of operation	1	1	1	(✔)	~	~	(~)	(~) (~	1	1
		Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	-										
	Fair competition	Employee awareness of the importance of compliance with competition legislation and fair competition.	1 -	5		1	/	/	/		/	6	
	rair competition	Legal actions pending or completed during the reporting period regarding anti-competitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has	1			ľ			ľ		ľ	6	·
		been identified as a participant	-										
		General intellectual property rights and related issues associated with the economic sector	1	-									
Actors	Respect of intellectual property rights	Organization's policy and practice with regards to the respect of intellectual property rights	1	1	-	(✔)	-	-	*	-	1	1	-
Value Chain Actors		Absence of coercive communication with suppliers	1							-	\vdash		
Valu		Sufficient lead time	1										
	Supplier relationships	Reasonable volume fluctuations	1	1	-	(✓)	(*)	(~)	·	-	1	1	-
		Payments on time to suppliers	1										
		Industry codes of conduct in the sector	-				H	H	\vdash	+	+		
		Presence of an explicit code of conduct that protect human rights	- 6										
		of workers among suppliers Percentage of suppliers that the organization has audited with	- 6										
	Promoting social responsibility	regard to social responsibility along the supply chain Membership in initiatives that promotes social responsibility along	- 6	6	-	~	1	1	(~)	(~) ~	6	-
		the supply chain Integration of ethical, social, environmental and gender-equality	- 6										
		criterions in purchasing policy, distribution policy and contract	- 6										
		Support to suppliers in terms of consciousness-raising and counselling concerning the social responsibility issues	-										



	1	2				_				_	_		
	Health and safety	Presence of consumer complaints (at national, sectorial, organizational level) Quality of or number of information/signs on product health and		1	1						~		
		safety Number of consumer complaints (at national, sectorial, organizational level)	1			-	~	(√)	✓	-		1	1
		Presence of management measures to assess costumer health and safety	1										
		Presence of labels of health and safety requirements Presence of a mechanism for customers to provide feedback	1 6 6										
	Feedback mechanism	Management measures to improve feedback mechanisms	6	5	5	(✓)	(√)	/	1	-	1	5	5
Consumers		Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	2										
	Consumer privacy		,										
		Country ranking related to regulations on data-sharing	1	1	1		-	✓	(✓)	-	1	1	1
	Transparency	Presence of a law or norm regarding transparency	1										
		Non-compliance with regulations regarding transparency	2 2 1) *	6	
		Consumers complaints regarding transparency	1 5	5	4	(√)	✓	1	1	(√)			4
		Publication of a sustainability report Communication of the results of social and environmental life cycle	5										
		impact assessment Certifications/labels the organization obtained for the product	5										
		under investigation	-					Ш	L	L			
	End-of-Life Responsibility	Do internal management systems ensure that clear information is provided to consumers on end-of-life options?	1										
		Annual incidents of non-compliance with regulatory labelling requirements in one year?	1	1	-	1	√	1	1	1	1	1	-
			-							П	П		
	Freedom of association & collective bargaining	Evidence of Country non respect or support to Freedom of association and Collective bargaining	1	1	1	1	1	✓	1	1	1	1	1
	Child labour	Percentage of children working by country and sector	1	1	1	1	1	✓	✓	✓	1	1	1
	Fair salary			1									
		Living Wages	1										
		Minimum wage by country	1										
		Percentage of workers receiving the lowest paid	1										
			1		1	1	(✓)	1	1	-	(✓)	1	1
		The lowest paid workers are considering their wages meets their needs											
			1										
		Presence of suspicious deductions on wages	1 1										
		Regular and documented payment of workers	1 1										
	Working hours	Maximum number of working hours	1	2									
		Number of hours effectively worked by employees (at each level of employment)	3							<	✓		
		Number of holidays effectively used by employees (at each level of	1			1	1	1	1			1	
		employment). Respect of contractual agreements concerning overtime	1		2	ľ	•	, * 	ľ				1
		Clear communication of working hours and overtime arrangements	1										
		The organization provides flexibility	1										
Workers	Forced labour	Percentage (estimate) of forced labour by region	2	2									
		Workers voluntarily agree upon employment terms	1										
		Employment contracts are comprehensible to the workers and are											
		kept on file Employment contracts stipulate wage, working time, holidays and			2	1	1	✓	1	1	1	1	1
		terms of resignation Birth certificate, passport, identity card, work permit or other original documents belonging to workers are not retained or kept	1										
		Workers are free to terminate their employment within the	1										
		prevailing limits Workers are bonded by debts exceeding legal limits to the											
	Equal opportunities/discrimination	employer	1				H	H			H		
		Women in the Labour force participation rate by country	2	5									
		Country gender index ranking	2										
		Presence of formal policies on equal opportunities	6										
		Announcement of open positions happen through national/regional newspapers, public job databases on internet,	1		5	1	✓	✓	1	1	~	6	6
		employment services or other publicly available media ensuring a	1										
		Total numbers of incidents of discrimination and actions taken	1										
		Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of diversity											
		Ratio of basic salary of men to women by employee category	-										
		Occupational accident rate by country	5										
		Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	4										
		Presence of a formal policy concerning health and safety	1										
1	1	I	1										



Sodety	Contribution to Economic Development	Economic situation of the country/region (GDP, economic growth, unemployment,)	1	i	1	*	(√)	(✔)	~	(×)·	1	1
		Contribution of the organization to the economic progress	1									
	Corruption	Risk of corruption in the country and/or sub-region	2	5								
		Risk of corruption in the sector	6									6
		Formalized commitment of the organization to prevent corruption	6		5	1	1	1	_	1	√ 6	
		The organization carries out an anti-corruption program	1 1		,	ľ						
		The organization installs or cooperates with internal and external controls to prevent corruption	6									
		Written documents on active involvement of the organization in corruption and bribery	1 1									
		Financial damages	-									
	Technology development	Sector efforts in technology development	1 1									
		Involvement in technology transfer program or projects	6									
		Partnerships in research and development	1	5	5	1	~	(✓)	1		6	6
		Investments in technology development/ technology transfer	1									
			1									

Figure A4. S-LCA Impact Assessment of Internal Partner 4 – FINAL SCORE 5



		<u> </u>				lmp	act Ca	itego	ries		1	
				Performance							Impact	
Stakeholder Sub	b- Categories	Indicators	Inventory	Assessment (PA)	wc	HS	HR	SER	IR	G	Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	2									
	localization and Migration	Direct or indirect contribution of the organization to migration of individuals	4		/	(v)	(v)	/	/	/		
Dei	iocalization and ivilgration	Number of individuals who resettle, voluntarily or involuntarily, because of the	-	3	ľ	(*)	(*)	ľ	١.	•	3	
		organization Strength of organizational procedures for integrating migrant workers into the		-								
		community	-									
		Public Trust on Politicians	5		(×)	·		·	(×)	~		
Cor	mmunity engagement	Contribution of the organization to the local development	-	4	(*)	ľ	(✓)	ľ	(~)	_	4	
		Diversity of community stakeholder groups that engage with the organization	1									
		Number of meetings with community stakeholders	-									
		Organizational support (volunteer-hours or financial) for community initiatives	1									
		Strength of policies in place to protect cultural heritage	1									
Cul	Itural heritage		-	1		-	(√)	1	1	1	1	
		Presence/strength of organizational programs to include cultural heritage expression in the product design/production										
		Unemployment Statistics by Country	2									
Loc	cal employment	Poverty and Working Poverty by Country	1	2	1	(✓)	(✓)	1	~	1	1	
ž.		Percentage of workforce hired locally	-									
Local Community		Strength of policies on local hiring preferences (organization-specific indicator)	-	_								
5		Presence of policies on spending on locally-based suppliers	-	-								3
8		Percentage on spending on locally-based suppliers	-							Н		
9		Patent Filings	3									
	cess to immaterial											
	sources	Annual arrests connected to protests of organization actions	-	3	(√)	(√)	✓	~	(✓)	~	3	
		Do policies related to intellectual property respect moral and economic rights of	-									
		the community? Presence/strength of community education initiatives										
		Does the organization engage with local community over sustainable methods for			Н							
		sharing resources?	-									
Acc	cess to material resources	Does the organization have a certified environmental management system	1	2	ŀ	(✓)	✓	1	✓	(~)) 2	
		Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects?	2									
		Burden of Disease by Country	1									
	fe and healthy living	Pollution Levels by Country	3	2	1	~	~	~	(✓)	(~)) 1	
		Does the organization measure air/water/earth pollution?										
		Presence/Strength of Laws on Construction Safety Regulations	-									
		Organization efforts to strengthen community health (e.g. through shared community access to organization health resources)	1									
		Management effort to minimize use of hazardous substances	-	-								
		Strength of Public Security in Country of operation	3			,	,					
Sec	cure living conditions	Management policies related to private security personnel	-	3	(✓)	1	~	(~)	(✓)	(*)) 3	
		Number of legal complaints per year occurred against the organization with regard	-		l	1	1			1		
		to security concerns Number of causalities and injuries per year ascribed to the organization	-		l	1	1			1		
		Documented statement or procedures (policy, strategy etc.) to prevent engaging in			T		1			Т		
		or being complicit in anticompetitive behaviour	-	1	l					1	1	
ļ		Employee awareness of the importance of compliance with competition	-		/	/	/	/	_	/	1	
Fair	ir competition	legislation and fair competition. Legal actions pending or completed during the reporting period regarding anti-		1 -	ľ	ľ	·	ľ	-	ľ	-	
		competitive behaviour and violations of anti-trust and monopoly legislation in	-		l					1	1	
		which the reporting organization has been identified as a participant			_	1	1	_	1	_		
n	spect of intellectual	General intellectual property rights and related issues associated with the	1			1	1			1		
	spect of intellectual operty rights	economic sector Organization's policy and practice with regards to the respect of intellectual		1	(✔)	-	-	1	-	~	1	
	-p, //g/ica	property rights	-			L	L			L		
Acto		Absence of coercive communication with suppliers	1									
e sur	pplier relationships	Sufficient lead time	-	1	(✓)	(v)	(V)	/		/	1	
5	, ,	Reasonable volume fluctuations	-		()	(,,	.,	ľ	1	ľ		
Value Chain Actors		Payments on time to suppliers	-		-	-	-	\vdash	1	-		
>		Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers	-	1								
		among suppliers Percentage of suppliers that the organization has audited with regard to social		4	l						1	
		Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	-	1	l	1	1			1	1	
Pro	omoting social responsibility	Membership in initiatives that promotes social responsibility along the supply		1 -	1	1	~	(✓)	(✓)	~	-	
		chain	-	1	l	1	1			1	1	
		Integration of ethical, social, environmental and gender-equality criterions in	-	1	l	1	1			1	1	
		purchasing policy, distribution policy and contract signatures Support to suppliers in terms of consciousness-raising and counselling concerning		1	l					1	1	
		the social responsibility issues	-									



Mail of carry													
### Marked Andrew Advanced And			Presence of consumer complaints (at national sectorial organizational level)	1									
March Marc				•			,		,		,		
Marian materials		Health and safety	Presence of consumer complaints (at national, sectorial, organizational level)	-	1	-	·	(*)	•	-	*	1	
### A PART OF THE				-									
Manufacture			Presence of a mechanism for customers to provide feedback	-									
March Marc		Feedback mechanism	Practices related to customer satisfaction, including results of surveys measuring		-	(✓)	(✓)	1	~	-	~	-	
100-years (1000)			customer satisfaction										
March of the contemploy of the contemploy			Country ranking related to regulations on data-sharing	2									
March of the contemploy of the contemploy	p												
March of the contemploy of the contemploy	n mei	Consumer privacy	Strength of internal management system to protect consumer privacy Number of consumer complains related to breach of privacy or loss of data within		2	-	-	1	(V)	-	1	2	2
Note of the contribution for part	Cons		the last year										
Management Man			or loss of data within the last year	-									
Company Comp			Presence of a law or norm regarding transparency	1									
Secretary and the control of the con				1									
Part		Transparency		-	1	(✓)	~	/	~	(√)	~	1	
### Control of Ambridge Control of Control o			Communication of the results of social and environmental life cycle impact										
And a continued of the Proposed Country of the Co			Certifications/labels the organization obtained for the product under										
### Processor of Control Section and Control Section (1997) Processor of Control Section (1997) Processo			Do internal management systems ensure that clear information is provided to						_				
Figure 1 received in accordance of support to Prozebon of accordance on a control of support of the control of support of the control of support support of support of support of support of support of support o		End-of-Life Responsibility			-	~	✓	1	~	~	✓	-	
Control to impossibility of manufaction in the impossibility of manufaction and collection to impossibility of manufaction in the control in the				-									
Transfer of monotonics in the control of monotonic and control of monot			Evidence of Country non respect or support to Freedom of association and	1									
received of accountable of the comparison of designations of designation of designations of the comparison of the comparison of designation of the comparison of the compariso													
Subsequence for supporting Support of the control o		Freedom of association &							_				
Figure productions or reproductions on production and production of the control o			Workers are free to join unions of their choosing		1	ľ		*	*	ľ	1	1	
Section for the form where the seconds of moting and independent displayed week both and second of the second process of deficition where the second of the second process of th			Employee/union representatives are invited to contribute to planning of larger	-									
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laws and employment regulations.		Social benefits/social security								1			
		,		2									
		,	Health insurance, pension fund, child care, education, accommodation etc.) Evidence of violations of obligations to workers under labour or social security										



		Is the organization doing business in a region with ongoing conflicts?	-		Г		1					
	Prevention and mitigation of	Is the organization doing business in a sector that features linkages to conflicts			(v)	/	/	/	/	/		
	armed conflicts	(e.g. where the depletion of resources allows significant profits - extractive	-		(,	· ·		l		-	-	
		industries, forestry, fishery)?			<u> </u>							
	Contribution to Economic	Economic situation of the country/region (GDP, economic growth, unemployment,	4	3	1	(✓)	(✓)	✓	(✓)	✓	3	
		Contribution of the organization contribute to the economic progress	1									
Society		Risk of corruption in the country and/or sub-region	3									2
		Risk of corruption in the sector	-									
	Corruption	Formalized commitment of the organization to prevent corruption	-	3	1	1	1	1	1	1	2	
		The organization carries out an anti-corruption program	-									
		The organization installs or cooperates with internal and external controls to prevent corruption	-									
		Written documents on active involvement of the organization in corruption and bribery	-									
		Financial damages	-									
		Sector efforts in technology development	1									
	Technology development	Involvement in technology transfer program or projects	1	1	✓	1	(✓)	1	-	1	1	
		Partnerships in research and development	1					1				
		Investments in technology development/ technology transfer	1									

Figure A5. S-LCA Impact Assessment of Internal Partner 5 – FINAL SCORE 2



takeholder		Indicators	l	Performance				ategor		Н		
	Sub- Categories		Inventory	Assessment (PA)	wc	HS	HR	SER	IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	1									
		Direct or indirect contribution of the organization to migration of individuals	4									
	Delocalization and Migration	Number of individuals who resettle, voluntarily or involuntarily, because of the organization	2	3	✓	(✔)	(✓)	~	~	(✓)	3	
		Strength of organizational procedures for integrating migrant										
		workers into the community	1									
		Public Trust on Politicians	2									
		Organization contribution to local development	1									
		Diversity of community stakeholder groups that engage with the										
	Community engagement	organization	-	2	(✓)	1	(✓)	1	(✓)	1	1	
		Number of meetings with community stakeholders Organizational support (volunteer-hours or financial) for community	-									
		initiatives	1									
		Indigenous land rights conflicts/land claims							-			
			-									
	Respect of indigenous rights	Strength of policies in place to protect the rights of indigenous community members	-	2	(√)	(√)	/	(v)	/	(✓)	2	
		Annual meetings held with indigenous community members		_	l` ′	` '		. ,		` '	_	
			2									
		Unemployment Statistics by Country	1									
		Poverty and Working Poverty by Country	-									
	Land and an alternation	Percentage of workforce hired locally	,	2	,	(×)	(~)	/	/	/		
	Local employment		2	2	ľ	(*)	(*)	1	ľ	ľ	1	
Local Community		Strength of policies on local hiring preferences (organization-specific Presence of policies on spending on locally-based suppliers	-			1			1			
Œ.		Percentage on spending on locally-based suppliers	-									2
S		Patent Filings	1									
٩		Annual arrests connected to protests of organization actions Do policies related to intellectual property respect moral and	-		(v)	(×)	1	/	(v)	/		
	Access to immaterial resources	economic rights of the community?	1	1	(*)	(*)	•	1	(*)	-	1	
		Presence/strength of community education initiatives	1									
		Strength of organizational risk assessment with regard to potential							ı			
		for material resource conflict	1									
		Does the organization engage with local community over sustainable methods for sharing resources?										
	Access to material resources		1	1	-	(✓)	~	~	~	(✓)	1	
		Does the organization have a certified environmental management										
		system	1									
		Has the organization caused infrastructures improvements (e.g. Burden of Disease by Country	1						\vdash			
		Pollution Levels by Country	2									
		Does the organization measure air/water/earth pollution?	2									
		Presence/Strength of Laws on Construction Safety Regulations										
	Safe and healthy living conditions		-	2	1	~	~	~	(✓)	(✓)	1	
		Organization efforts to strengthen community health (e.g. through shared community access to organization health resources)	1									
		Management effort to minimize use of hazardous substances	1									
		Strength of Public Security in Country of operation Management policies related to private security personnel	1									
	Secure living conditions	Number of legal complaints per year occurred against the	-	1	(✔)	1	1	(v)	(~)	(✓)	1	
		organization with regard to security concerns Number of causalities and injuries per year ascribed to the			` '			. ,	ľ	` '		
		organization	-									
		Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	2									
						1			1			
	Fair competition	Employee awareness of the importance of compliance with competition legislation and fair competition.	-	2	1	1	1	1		/	1	
		Legal actions pending or completed during the reporting period				1			1			
		regarding anti-competitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has	-									
		been identified as a participant							_			
		General intellectual property rights and related issues associated with the economic sector	1									
	Respect of intellectual property rights	Organization's policy and practice with regards to the respect of	1	1	(✔)	-	-	~	-	1	1	
		intellectual property rights							<u> </u>			
		Absence of coercive communication with suppliers Sufficient lead time	1			1			1			
rtors	1	Reasonable volume fluctuations	1	1	(✔)	(√)	(v)	1	1.	/	1	
ain Actors	Supplier relationships	reasonable volume nuctuations	1		l` ′	ľ. <i>′</i>	'		1			1
e Chain Actors	Supplier relationships	Payments on time to suppliers										
Value Chain Actors	Supplier relationships	Payments on time to suppliers	1			L	L		L			
	Supplier relationships	Industry codes of conduct in the sector	1									
	Supplier relationships	Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of	1									
	Supplier relationships	Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers										
	Supplier relationships	Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	1									
	Supplier relationships Promoting social responsibility	Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain Membership in intaltwes that promotes social responsibility along	1	1	·	·	>	(~)	(*)	·	1	
		Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers Percentage of suppliers that the organization has audited with search to accid responsibility along the supply chain. Membership in initiatives that promotes social responsibility along the supply chain.	1	1	·	·	·	(*)	(~)	~	1	
		Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers Precentage of suppliers that the organization has audited with regard to social responsibility along the supply chain Membership in initiatives that promotes social responsibility along the supply chain Integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract	1	1	·	~	~	(*)	(~)	~	1	
		Industry codes of conduct in the sector Presence of an explicit code of conduct that protect human rights of workers among suppliers Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain Membership in intiatives that promotes social responsibility along the supply chain Integration of ethical, social, environmental and gender-equality Integration of ethical, social, environmental and gender-equality	1 1 - 1	1	~	~	~	(४)	(~)	~	1	



		Presence of consumer complaints (at national, sectorial,	4						П		
		organizational level) Quality of or number of information/signs on product health and	1								
	Health and safety	safety Presence of consumer complaints (at national, sectorial,	1	1		1	(✓)	~		1	
		organizational level)	-								
		Presence of management measures to assess costumer health and Presence of labels of health and safety requirements	1								
		Presence of a mechanism for customers to provide feedback	1								
	Feedback mechanism	Management measures to improve feedback mechanisms	1	1	(✓)	(✓)	~	1		1	
g.		Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	1								
Consumers		Country ranking related to regulations on data-sharing Strength of internal management system to protect consumer	1								1
8	Consumer privacy	privacy Number of consumer complains related to breach of privacy or loss	1	1		_	1	(v)			
	,,	of data within the last year	-								
		Number of complaints by regulatory bodies related to breach on consumer privacy or loss of data within the last year	-								
		Presence of a law or norm regarding transparency Non-compliance with regulations regarding transparency	1								
		Consumers complaints regarding transparency Publication of a sustainability report	1		(✓)	,	1	/	(×) ×		
	Transparency	Communication of the results of social and environmental life cycle impact assessment	1	1	(*)	ľ	•	ľ	(*)	1	
		Certifications/labels the organization obtained for the product	1								
	End-of-Life Responsibility	under investigation Do internal management systems ensure that clear information is	1	1	/	1	·	1	/ /	1	-
		provided to consumers on end-of-life options? Evidence of Country non respect or support to Freedom of	2								
		association and Collective bargaining Presence of unions within the organization is adequately supported	2								
			1								
1	Freedom of association & collective bargaining	Workers are free to join unions of their choosing Employee/union representatives are invited to contribute to	1	. 2	1	1	1	~	/ /	1	
1		planning of larger changes in the company, which will affect the working conditions	1								
		Workers have access to a neutral, binding, and independent dispute	-								
		resolution procedure Percentage of children working by country and sector	1								
		Absence of working children under the legal age or 15 years old									
	Child labour	Children are not performing work during the night	1	1	1	1	✓	~	1	1	
		Records on all workers, stating names, ages and date of birth are	-								
		Working children younger than 15 and under local compulsory age Living Wages	1								
		Minimum wage by country	2								
	Fair salary	Percentage of workers receiving the lowest paid The lowest paid workers are considering their wages meets their	3	2	1	(✓)	V	~		1	
		Presence of suspicious deductions on wages Regular and documented payment of workers	1								
		Maximum number of working hours	1								
			1								
		Number of hours effectively worked by employees (at each level of employment)	-								
	Working hours	Number of holidays effectively used by employees (at each level of employment).	2	2	1	1	~	~		1	
		Respect of contractual agreements concerning overtime	1								
		Clear communication of working hours and overtime arrangements The organization provides flexibility	1								
		Workers voluntarily agree upon employment terms	1								
		Employment contracts are comprehensible to the workers and are Employment contracts stipulate wage, working time, holidays and	-								
		terms of resignation	-								
5	Forced labour	Birth certificate, passport, identity card, work permit or other original documents belonging to workers are not retained or kept for	-	1	1	1	~	1	/ /	1	
Workers		safety reasons by the organization Workers are free to terminate their employment within the									2
		prevailing limits Workers are bonded by debts exceeding legal limits to the employer	-								
		Women in the Labour force participation rate by country	•						+		
			3								
		Country gender index ranking	3								
		Presence of formal policies on equal opportunities	1								
	Equal opportunities/discrimination	Announcement of open positions happen through national/regional		3	1	~	1	1	1 1	2	
		Total numbers of incidents of discrimination and actions taken Composition of governance bodies and breakdown of employees per	-								
		category according to gender, age group, minority, group membership and other indicators of diversity	4								
		Ratio of basic salary of men to women by employee category	-						Ш		
		Occupational accident rate by country	4								
		Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	2								
		Presence of a formal policy concerning health and safety Adequate general occupational safety measures are taken	1								
	Health and safety	Preventive measures and emergency protocols exist regarding	1	3	✓	1	~	~		3	
		accidents & injuries Preventive measures and emergency protocols exist regarding	1								
		pesticides and chemical exposure	1								
		Appropriate protective gear required in all applicable situation Number of occupational safety and health administration violations	1								
		Education, training, counselling, prevention and risk control programs in place to assist workforce members, their families or	1			L		L	\Box		
		Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)									
			2								
	Social benefits/social security	List and provide short description of social benefits provided to the	1	. 2	1	1	~	~	V (V	1	
		workers (eg. Health insurance, pension fund, child care, education, Evidence of violations of obligations to workers under labour or									
1		Percentage of permanent workers receiving paid time-off	-								



		2									
s sustainable	agreements by the organization by the local community or other stakeholders	-	2	(✔)	(✔)	-	(✓)	-	1	2	
F	Presence of mechanisms to follow-up the realisation of promises	1									
i i	Is the organization doing business in a region with ongoing conflicts?	-									
t	to conflicts (e.g. where the depletion of resources allows significant	2									
tion and Mitigation of Conflicts	the escalation or de-escalation of conflicts (e.g. conflict escalation by massive pollution, de-escalation by trade beyond conflict	-	2	(✔)	~	1	~	✓	✓	1	
C.	Organization's role in the development of conflicts	2									
 	Disputed products	-									
		2	2	~	(✔)	(✓)	·	(✓)	~	1	4
(Contribution of the organization to the economic progress	1									
	Risk of corruption in the country and/or sub-region	2									
, , , , , , , , , , , , , , , , , , ,	Risk of corruption in the sector	6									
Ī	Formalized commitment of the organization to prevent corruption	1									
	The organization carries out an anti-corruption program	1	4	/	1	/	/	/	/	5	
The organization installs or cooperates with internal and external controls to prevent corruption 1 Written documents on active involvement of the organization in corruption and brilery 1							<u>-</u>				
ļ.	Financial damages	-						l			
	Sector efforts in technology development	1									
	Involvement in technology transfer program or projects	1						l			
logy development			1	✓	V	(✓)	✓	-	✓	1	
logy development	Partnerships in research and development	1		•		` '					
tic	on and Mitigation of Conflicts tion to Economic Development	agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits—structure instatines, forestry, fisherly) on and Mitigation of Conflicts the sextander instatines, forestry, fisherly the organization of one fisher the sextander instatines the sextander instation of conflicts (e.g. one) forestry massive pollution, de-escalation by trade beyond conflict boundaries?? Organization's role in the development of conflicts Oisputed products Excommic Struction of the country/region (GDP, economic growth, unemployment,) To product the country and/or sub-region Risk of corruption in the country and/or sub-region Risk of corruption in the country and/or sub-region The organization circles or an anti-corruption program The organization instalies conceptates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and bribery Financial damages Sector efforts in technology development Involvement in technology transfer program or projects	on sustainable on sustainable constitution of the organization to the conomic promises or speements by the organization by the local community or other stakeholders presence of mechanisms to follow-up the realisation of promises or speements by the organization by the local community or other stakeholders presence of mechanisms to follow-up the realisation of promises 1 Is the organization doing business in a region with organization filtings to conflicts (e.g. where the depletion of resources allows significant profits - sectative industries, forestry, fishery); Is the organization doing business in a sector otherwise linked to the excitation fore forestry, forestry, fishery); Is the organization doing business in a sector otherwise linked to the excitation of certactive industries; forestry, fishery); Is the organization of organization of conflicts do conflict scale business; in a sector otherwise linked to the excitation of the excitation of conflicts organization business; in a sector otherwise linked to the excitation by trade beyond conflict boundaries? Organization's role in the development of conflicts Doupted products Economic Situation of the country/region (GDP, economic growth, unemployment,) 2 Risk of corruption in the country and/or sub-region On The organization distalls or the economic progress 1 The organization distalls concepted with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and bribery Financial diamages Sector efforts in technology development Involvement in technology development Involvement in technology transfer program or projects	on sustainable on sustainable constitution of the organization of promises or agreement by the organization by the local community or other stakeholders presence of mechanisms to follow-up the realisation of promises or safety of the organization doing business in a region with ongoing conflicts? It the organization doing business in a region with ongoing conflicts? It the organization doing business in a region with ongoing conflicts? It the organization doing business in a region with ongoing conflicts? It the organization of conflicts is the conflicts of conflicts of the conflicts of conflicts (e.g. where the depletion of resources allows significant profits - secrative industries, forestry, fishery)? It is the organization doing business in a sector otherwise linked to the excatable industries, forestry, fishery)? It is the organization of conflicts or conflicts or conflicts organization to fore second or conflicts organization by massive pollution, de-escalation by trade beyond conflict boundaries? Organization's role in the development of conflicts Doupted products Economic Situation of the country/region (GDP, economic growth, unemployment,) 2 The conflict of the country organization to the economic progress It is of corruption in the sector organization to prevent corruption. The organization carries out an anti-corruption program The organization installs or cooperates with internal and external controls to prevent corruption. Written documents on active involvement of the organization in corruption and bribery Financial damages Sector efforts in technology development Involvement in technology transfer program or projects	on sustainability issues Completits issued related to the non-fulfilment of promises or agreement by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises It the organization doing business in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector that features linkage to conflicts (e.g. where the depletion of resources allows significant profits - sectative industries, fovertry, fishery) as the organization doing business in a sector otherwise linked to the sectable of the catalogue of the security of the profits of the organization by massive pollution, de-escalation by trade beyond conflict boundaries? Organization's role in the development of conflicts Doupted products Economic Situation of the country/region (GDP, economic growth, unemployment,) Contribution of the organization to the economic progress It is do corruption in the security mad/or sub-begion Risk of corruption in the security mad/or sub-begion The organization carries out an anti-corruption program The organization carries out an anti-corruption program The organization carries out an anti-corruption program The organization installs or cooperates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and bribery Financial damages Sector efforts in technology development Involvement in technology transfer program or projects 1	on sustainability issues Compliants issued related to the non-fulfillment of promise or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises or agreements by the organization doing business in a region with onegoing conflicts? Is the organization doing business in a region with onegoing conflicts? Is the organization doing business in a rector that features linkages to conflicts (e.g. where the depletion of resources allows significant profits - secrative industries, forestry, fishery) an and Mitigation of Conflicts Is the organization doing business in a sector otherwise linked to the secretariation of the secretariation of conflicts of gooding exalation by massive pollution, de-escalation by trade beyond conflict boundaries? Organization's role in the development of conflicts Doputed products Economic Stutation of the country/region (GDP, economic growth, unemployment,) 2 2 4 (Y) Risk of corruption in the country and/or sub-region 2 8 Risk of corruption in the country and/or sub-region On The organization carries out an anti-corruption program The organization intails or cooperates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and brittery Financial damages Sector efforts in technology development Involvement in technology development Involvement in technology development Involvement in technology development	on sustainability issues Compating issued related to the non-fulliment of promises or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises of sugments by the organization of by the local community or other stakeholders The organization doing business in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization of organization of resources allows significant profits - exertactive industries, forestry, fishery) Is the organization doing business in a sector otherwise linked to support the exertactive industries, forestry, fishery) Is the organization doing business in a sector otherwise linked to massive pollution, de-excalation by trade beyond conflict boundaries? Organization's role in the development of conflicts Disputed products Econonic Stuation of the country/region (GDP, economic growth, unemployment,) Risk of corruption in the country and/or sub-region On The organization arries out an anti-corruption program The organization arries out an anti-corruption program The organization installs or cooperates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and bribery Financial damages Sector efforts in technology development Towoherent in technology transfer program or projects	on sustainability issues Compliants issued related to the non-fulfillment of promises or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises or agreements by the organization doing business in a region with one point conflicts or the organization doing business in a region with one point conflicts or the organization of promises to conflicts (e.g., where the depletion of resources allows significant profits - certardave industries, forestry, fishery) on and Mitigation of Conflicts is the organization doing business in a sector otherwise linked to the extractive industries, forestry, fishery) is the organization doing business in a sector otherwise linked to masked poliution, de-excalation by trade beyond conflict business in a sector otherwise linked to poundaries? Organization's role in the development of conflicts Disputed products Economic situation of the country/region (GDP, economic growth, unemployment,) 2 2 2 V (V) (V) All tion to Economic Development Contribution of the organization to the economic progress 1 8isk of corruption in the econtry and/or sub-region 2 8isk of corruption in the econtry and/or sub-region The organization carries out an anti-corruption program 1 The organization installs or cooperates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and bribery 1 Financial diamages Sector efforts in technology development 1 movement in technology development 1 movement in technology development 1 movement in technology development 1 movement in technology development 1 movement in technology transfer program or projects	on sustainability issues Comparisition Studer desided to the non-fulfillment of promises or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises It is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization of organization of resources allows significant profits - extractive industries, forestry, fishery to conflicts (e.g., where the depletion of resources allows significant profits - extractive industries, forestry, fishery) Is the organization doing business in a sector otherwise linked to the caractive industries, forestry, fishery) State organization of excellation of conflicts go conflict scalability or the development of conflicts Disputed products Economic Studation of the country/region (GDP, economic growth, unemployment,) The organization of the country sub-region On The organization carries out an anti-corruption program The organization installs or cooperates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and orbitely and organization in programs Sector efforts in technology development The organization installs or cooperates with internal and external controls to prevent in technology development The organization installs or cooperates with internal and external controls to prevent minute the organization in corruption and orbitely and organization in programs Sector efforts in technology development The organization installs or cooperates with internal and external controls to prevent in technology development The organization installs or cooperates with internal and external controls to prevent corruption in the country and organizati	on asstalinability issues Complaints issued related to the non-duffinent of promises or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realization of promises or is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector discharged to conflicts (e.g. where the depletion of resources allows significant profits - sectrative industries, forestry, fishery)? The organization doing business in a sector deherwise linked to the excitation of sector forestry, fishery)? The organization of de-exable or conflicts or conflicts be excitation of de-exable or or official section by trade beyond conflict boundaries? Organization's role in the development of conflicts Disputed products Economic Stutistion of the country/region (GDP, economic growth, unemployment,) The organization of the country of the country organization to the economic progress Risk of corruption in the sector Formalized commitment of the organization to prevent corruption The organization crires out an anti-corruption program The organization installs or cooperates with internal and external controls to prevent corruption Written documents on active involvement of the organization in corruption and bribery Financial damages Sector efforts in technology development Involvement in technology development Involvement in technology development Involvement in technology development	on authinability issues Complaints issued related to the non-dufflment of promises or agreements by the organization by the local community or other stakeholders Presence of mechanisms to follow-up the realisation of promises It the organization doing business in a region with ongoing conflicts? Is the organization doing business in a region with ongoing conflicts? Is the organization doing business in a sector first features linkages to conflicts (e.g. where the depletion of resources allows significant profits - sectative industries, forestry, fishery)? Is the organization doing business in a sector of the number of the conflicts of conflicts (e.g. where the depletion of resources allows significant profits - sectative industries, forestry, fishery)? Is the organization doing business in a sector of the number of the conflicts of the section of ordinities (e.g. ordine sexialation by masker pollution, de-escalation by trade beyond conflict boundaries?) Organization's role in the development of conflicts Disputed products Economic Busiliance of the country/region (GDP, economic growth, unemployment,) 2

Figure A6. S-LCA Impact Assessment of Internal Partner 6 – FINAL SCORE 3

						Imp	act C	ategor	ies			
Stakeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	wc	HS	HR	SER	IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	3									
	Delocalization and Migration	Direct or indirect contribution of the organization to migration of individuals	1	3	1	(v)	(√)	1	1	(v)	3	
		Strength of organizational procedures for integrating migrant workers into the community	3									
		Public Trust on Politicians	,			H	\vdash		+			
	Community engagement		1	4	(✓)	1	(√)	1	(v)	1	4	
		Organizational support (volunteer-hours or financial) for community initiatives	5									
		Collaboration with community stakeholders	2									
		Unemployment Statistics by Country	1									
	Local employment	Poverty and Working Poverty by Country	1	2	1	(✓)	(✓)	1	1	1	1	
Community		Strength of policies on local hiring preferences (organization-specific indicator)	3									
Ē		Contribution to the reduction of local unemployment	1									3
ocal Co		Patent Filings	2									-
9	Access to immaterial resources	Presence/strength of community education initiatives	4	3	(✓)	(✓)	1	1	(√)	1	3	
		Guarantee freedom of expression of the local community	1			_						
	Access to material resources	Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects?	3	2	-	(v)	1	1	1	(~)	1	
		Commitment in minimizing the resources consumption	1		_	₩	_	<u> </u>	-	₩		
		Burden of Disease by Country	1									
	Safe and healthy living conditions	Pollution Levels by Country	1	2	1	1	~	1	(✔)	(~)	1	
		Commitment in strengthening community health and minimise the environmental pollution	2									
		Presence of policies/regulations for safety	1									
	Secure living conditions	Strength of Public Security in Country of operation	2	2	(✔)	~	1	(✔)	(✓)	(✓)	2	
		Management policies related to private security personnel	-			1	1	1	1	1		
		Number of causalities and injuries per year ascribed to the organization Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	2			t	H	H	t	H		
	Fair competition	being complicit in anticompetitive behaviour Employee awareness of the importance of compliance with competition legislation and fair competition.	1	2	1	1	1	1	-	1	1	
90		Approach to general intellectual property rights and related issues associated with the economic sector	1	,	1.0	Г		,	T	Ţ		
Actor Actor	Respect of intellectual property rights	Organization's policy and practice with regards to the respect of intellectual property rights	1	1	(✓)	ľ	-	1	1	~	1	
Value Chain Actors	Supplier relationships	Mutual co-operation with the suppliers Fair behaviour with the suppliers (absence of coercive communication, sufficient lead	1	1	(✓)	(~)	(√)	~	-	1	1	3
Valu		time, reasonable volume fluctuation, payments on time) Presence of an explicit code of conduct that protect human rights of workers among	4			H		\vdash	+	H		
	Promoting social responsibility	suppliers Percentage of suppliers that the organization has audited with regard to social	4	4	1	/	1	(√)	(v)	1	4	
		responsibility along the supply chain integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures	4									



		Presence of consumer complaints (at national, sectorial, organizational level)	1									
	Health and safety	Quality of or number of information/signs on product health and safety	1	3	-	1	(✓)	~	-	1	3	
		Presence of management measures to assess costumer health and safety	4									
		Presence of a mechanism for customers to provide feedback	2				T					
	Feedback mechanism	Practices related to customer satisfaction, including results of surveys measuring	2	2	(✔)	(~)	1	1	-	1	2	
		customer satisfaction Country ranking related to regulations on data-sharing										
e			1									
Consumer	Consumer privacy	Strength of internal management system to protect consumer privacy	1	1	-	-	1	(√)	-	1	1	2
Š		Number of consumer complains related to breach of privacy or loss of data within the	-									
		last year Presence of a law or norm regarding transparency				H	H					
			1									
	Transparency	Clear information to enable the consumer choice (e.g. presence of product certifications/labels, publication of annual sustainable reports, communication of	1	1	(✓)	1	1	1	(√)	1	1	
		results of social and environmental life cycle impact assessment) Communications regarding the product and social responsibility in a transparent way	1									
		Do internal management systems ensure that clear information is provided to consumers on end-of-life options?	3			Ι.			П			
	End-of-Life Responsibility	Presence of systems for the product take back	3	3	1	1	1	1	1	1	2	
		Evidence of Country non respect or support to Freedom of association and Collective					T		Т			
		bargaining	1									
	Freedom of association & collective bargaining			1	1	1	1	1	1	1	1	
	0	Evidence of restriction to freedom of association and collective bargaining	1			1						
		Workers are free to join unions of their choosing and the presence of unions within the organization is adequately supported	1			1						
I	Child labour	Percentage of children working by country and sector	1	1	/	/	1	1	1	1	1	
1	Ciniu iabour	Absence of working children under the legal age or 15 years old	1	1	Ľ	Ľ	ľ	Ý	ľ	ľ	1	
1		Living Wages	1			1						
1			1			1						
	Fair salary	Minimum wage by country		1	1	(√)	1	1	-	1	1	
		Presence of suspicious deductions on wages	1			1						
		Regular and documented payment of workers	1									
		Guarantee that wage levels ensure a decent standard of living Maximum number of working hours	1			-	+		+			
		•										
			1									
	Working hours			1	1	1	1	1	-	1	1	
		Number of holidays effectively used by employees (at each level of employment). Maximum number of hours worked by employees and possible difference with the	1									
		maximum number of hours effectively worked Percentage (estimate) of forced labour by region	1			-	-		+			
Vorkers		To contage (community or forced about by region	2									3
>	Forced labour	Employment contracts stipulate wage, working time, holidays and terms of resignation	1	2	1	1	1	✓	~	1	1	
		Workers voluntarily agree upon employment terms and are free to terminate their	1									
		employment within the prevailing limits Women in the Labour force participation rate by country	,			H	H					
			2									
		Country gender index ranking										
	Equal opportunities/discrimination		2	3	1	1	1	1	1	1	2	
		Presence of formal policies on equal opportunities	1									
I		Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of	4			1						
I		diversity	·			1						
		Absence of any kinds of discrimination Occupational accident rate by country	1			⊢	\vdash		\vdash			
			5			1						
I	Health and safety			4	1	1	1	1	-	1	4	
1		Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	2			1						
1		Adequate management system for health and safety, so that the risk of workers is low	1		L	L	L		L	L		
1		Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)				1						
	Social benefits/social security	"	2	2	/	/	1	1	1	(~)	1	
	- January - January	List and provide short description of social benefits provided to the workers (eg. Health			Ľ	ľ	ľ		1	. ,		
		insurance, pension fund, child care, education, accommodation etc.)	2			L						
1	Public commitments to sustainable issues	Presence of publicly available documents as promises or agreements on sustainability issues	4	4	(√)	(√)	١.	(√)	L	/	3	
1	10 303,000,000,000,000	Presence of mechanisms to follow-up the realisation of promises	4		Ľ	Γ΄	L	L''	1	Ľ		
		Economic situation of the country/region (GDP, economic growth, unemployment,)										
	Contribution to Economic Development		1	1	~	(√)	(✓)	1	(✔)	1	1	
1		Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,)	1			1						
Society		wages, purchase of raw materials and supplies, investments,) Risk of corruption in the country and/or sub-region				t	H		H			4
So			2									•
	Corruption		L	4	~	1	1	1	1	1	5	
		Formalized commitment of the organization to prevent corruption/presence of an anti- corruption program	5									
		Involvement in cases of corruption	-			L	L	1				
	Technology development	Involvement in technology transfer program or projects	1	1	/	/	(√)	1	L	/	1	
1		Engagement in the development of efficient and environmental sound technologies investments in technology development/ technology transfer	1		ľ	ľ	(-)	1				
									-	_		

Figure A7. S-LCA Impact Assessment of Internal Partner 7 – FINAL SCORE 3



(IA)	HS	wc	Performance Assessment (PA)	Inventory	Indicators	Sub- Categories
, · · · · ·			ASSESSMENT (FA)	2	International Migrants as a Percentage of Population	
				2	Direct or indirect contribution of the organization to migration of	
(Y) (Y) Y Y (Y) 1	(✓)	1	2	-	individuals Number of individuals who resettle, voluntarily or involuntarily,	Delocalization and Migration
				-	because of the organization	
				-	Strength of organizational procedures for integrating migrant workers into the community	
				5	Public Trust on Politicians	
				1	Contribution of the organization to the local development	
√ (✓) ✓ (✓) ✓ 4	~	(✓)	4	1	Diversity of community stakeholder groups that engage with the	Community engagement
				-	organization Number of meetings with community stakeholders	
				1	Organizational support (volunteer-hours or financial) for community	
 					Initiatives Cultural Heritage in Urgent Need of Safeguarding	
					Prevalence of Racial Discrimination	
- (V) V V 1	-	-	1	1	Strength of policies in place to protect cultural heritage	Cultural Heritage
				-	Presence/strength of organizational programs to include cultural heritage expression in the product design/production	
				-	Indigenous land rights conflicts/land claims	
(Y) Y (Y) Y (Y) 1	(✓)	(✔)	1	1	Strength of policies in place to protect the rights of indigenous	Respect of indigenous rights
				-	community members Annual meetings held with indigenous community members	
				2	Unemployment Statistics by Country	
				-	Poverty and Working Poverty by Country	an ni ty
(v) (v) v v v 1	(✓)	1	2	2	Percentage of workforce hired locally	Cocal employment
				-	Strength of policies on local hiring preferences (organization-specific indicator)	рса
				-	Presence of policies on spending on locally-based suppliers Percentage on spending on locally-based suppliers	
				3	Patent Filings	
(Y) Y Y (Y) Y 1	(✓)	(✓)	2	1	Annual arrests connected to protests of organization actions Do policies related to intellectual property respect moral and economic	Access to immaterial resources
				1	rights of the community? Presence/strength of community education initiatives	resources
				2	Strength of organizational risk assessment with regard to potential for	
				-	material resource conflict Does the organization engage with local community over sustainable	
(Y) Y Y (Y) 2	(✓)	-	2		methods for sharing resources? Does the organization have a certified environmental management	Access to material resources
				1	system Has the organization caused infrastructures improvements (e.g.	
 				-	roadways, waste disposal systems) having long term effects?	
				1	Burden of Disease by Country	
				3	Pollution Levels by Country	
✓	/	1	2	1	Does the organization measure air/water/earth pollution?	Safe and healthy living
				1	Presence/Strength of Laws on Construction Safety Regulations	conditions
				2	Organization efforts to strengthen community health (e.g. through shared community access to organization health resources)	
				1	Management effort to minimize use of hazardous substances	
				4	Strength of Public Security in Country of operation	
√ √ (√) (√) 4	/	(✓)	4	-	Management policies related to private security personnel	Secure living conditions
					with regard to security concerns	
					Documented statement or procedures (policy, strategy etc.) to prevent	
					engaging in or being complicit in anticompetitive behaviour Employee awareness of the importance of compliance with competition	
✓	~	~	1	*	legislation and fair competition. Legal actions pending or completed during the reporting period	Fair competition
				1	regarding anti-competitive behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has been identified as a participant	
	_	(√)	1	1	the economic sector	Respect of intellectual
		<u> </u>		1	intellectual property rights	property rights
				1	Absence of coercive communication with suppliers	ttors
Y) (Y) Y - Y 1	(✓)	(✓)	i	1	Sufficient lead time Reasonable volume fluctuations	Y Supplier relationships 로
				1 -	Payments on time to suppliers Industry codes of conduct in the sector	/alue C
				1	Presence of an explicit code of conduct that protect human rights of workers among suppliers	
				-	Percentage of suppliers that the organization has audited with regard	
✓	~	~	1	1	Membership in initiatives that promotes social responsibility along the supply chain	Promoting social responsibility
	1	ĺ			Integration of ethical, social, environmental and gender-equality	
				1	criterions in purchasing policy, distribution policy and contract	
	· (v)	(Y)	. 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Number of legal complaints per year occurred against the organization with regard to scurity concerns Number of causalities and injuries per year ascribed to the organization Documented statement or procedures (policy, strategy etc.) to prevent engaging nor being complict in antiompetitive behaviour finployee awareness of the importance of compliance with competition legalstan and fair competition. Legal actions pending or completed during the reporting pendingstation and prospective behaviour and violations of anti-trust and monopoly legislation in which the reporting organization has been identified as a participant. General intellectual property rights and related sissues associated with the economic sector Organization's policy and practice with regards to the respect of intellectual property rights. Absence of oercive communication with suppliers Sufficient lead time Reasonable volume fluctuations Sufficient yodes of conduct in the sector. Presence of an explicit code of conduct that protect human rights of workers among suppliers Percentage of suppliers that the organization has audited with regard to social responsibility along the Membership in inhitatives that promotes social responsibility along the	Fair competition Respect of intellectual property rights Supplier relationships Supplier relationships Promoting social



		Presence of consumer complaints (at national, sectorial, organizational level)	1									
		Quality of or number of information/signs on product health and safety	1									
	Health and safety		•	,		1	(×)	/		/	,	
	nearth and safety	Presence of consumer complaints (at national, sectorial, organizational level)	-		1	•	(*)	`	-	ľ	*	
		Presence of management measures to assess costumer health and safety	1									
		Presence of labels of health and safety requirements	1									
		Presence of a mechanism for customers to provide feedback	1									
	Feedback mechanism	Management measures to improve feedback mechanisms Practices related to customer satisfaction, including results of surveys	1	1	(✓)	(✓)	1	~	-	~	1	
		measuring customer satisfaction	1									
		Country ranking related to regulations on data-sharing	2									
mers												
Consumers	Consumer privacy	Strength of internal management system to protect consumer privacy	1	2	-	-	1	(✓)	-	(✓)	3	2
		Number of consumer complains related to breach of privacy or loss of	-									
		data within the last year Number of complaints by regulatory bodies related to breach on	-									
		consumer privacy or loss of data within the last year Presence of a law or norm regarding transparency	1									
		Non-compliance with regulations regarding transparency Consumers complaints regarding transparency	1									
		Publication of a sustainability report Quality and comprehensiveness of the information available in the	1									
	Transparency	sustainability report or in other documents regarding social and environmental performances of the organization	1	1	(✓)	~	1	V	(✓)	~	1	
		Communication of the results of social and environmental life cycle impact assessment	1									
		Certifications/labels the organization obtained for the product under investigation	1									
		Do internal management systems ensure that clear information is	-									
	End-of-Life Responsibility	provided to consumers on end-of-life options? Annual incidents of non-compliance with regulatory labelling	-	-	~	~	1	*	~	~	•	
		requirements in one year?					Н		H			
		Evidence of Country non respect or support to Freedom of association and Collective bargaining	1									
		Evidence of restriction to Freedom of association and Collective	1									
	Freedom of association &	bargaining Presence of unions within the organization is adequately supported	1	1	1	1	/	/	/	/	1	
	collective bargaining	Workers are free to join unions of their choosing	-		ľ	·		'	ľ		•	
		Employee/union representatives are invited to contribute to planning of larger changes in the company, which will affect the working	1									
		conditions Workers have access to a neutral, binding and independent dispute										
		resolution procedure	1									
		Percentage of children working by country and sector Absence of working children under the legal age or 15 years old	1									
	Child labour	Children are not performing work during the night	1	1	1	1	1	~	1	~	1	
		Records on all workers, stating names, ages and date of birth are kept on file	-									
		Working children younger than 15 and under local compulsory age are attending school	1									
		Minimum wage by country	3									
		Living wage	2									
	Fair salary	Percentage of workers receiving the lowest paid The lowest paid workers are considering their wages meets their needs	-	2	*	(v)	'	·	-	~	1	
		Presence of suspicious deductions on wages	1									
		Regular and documented payment of workers Maximum number of working hours	1									
		Number of hours effectively worked by employees (at each level of employment)	-									
	Working hours	Number of holidays effectively used by employees (at each level of employment)	-	1	/	/	/	/		/	1	
		Respect of contractual agreements concerning overtime Clear communication of working hours and overtime arrangements	1									
		The organization provides flexibility	1									
		Percentage (estimate) of forced labour by region	2									
		Workers voluntarily agree upon employment terms	1									
		Employment contracts are comprehensible to the workers and are kept on file	1									
	Forced labour	Employment contracts stipulate wage, working time, holidays and terms of resignation	1	2	1	~	1	~	~	~	1	
Workers		Birth certificate, passport, identity card, work permit or other original documents belonging to workers are not retained or kept for safety	-									1
š		reasons by the organization Workers are free to terminate their employment within the prevailing	1									
	<u> </u>	limits Women in the Labour force participation rate by country	3						\vdash			
		Country gender index ranking	3									
		Presence of formal policies on equal opportunities	1									
	Equal	Announcement of open positions happen through national/regional newspapers, public job databases on internet, employment services or	-									
	opportunities/discriminati on	other publicly available media ensuring a broad announcement Total numbers of incidents of discrimination and actions taken	-	2	1	1	1	1	~	✓	1	
		Composition of governance bodies and breakdown of employees per	3									
		category according to gender, age group, minority, group membership and other indicators of diversity	3									
		Ratio of basic salary of men to women by employee category	1		L	L	L	L				
		Occupational accident rate by country	1						Г			
		Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	2									
		job qualification inside the company Hours of injuries per level of employees	-									
		Presence of a formal policy concerning health and safety	1									
		Adequate general occupational safety measures are taken	1									
	Health and safety	Preventive measures and emergency protocols exist regarding accidents & injuries	1	2	1	1	/	1	-	/	1	
		Preventive measures and emergency protocols exist regarding	1									
		pesticides and chemical exposure										
		Appropriate protective gear required in all applicable situation present Number of occupational safety and health administration violations	1									
		reported within the past 3 years and status of violations	-									
		Education, training, counselling, prevention and risk control programs in place to assist workforce members, their families or community	1									
	—	members regarding serious diseases Social security expenditure by country and branches of social security							\vdash	Н		
		(e.g. Healthcare, sickness, maternity)	2									
	Social benefits/socia	List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education,	2	2	1	1	1	/	~	(✓)	1	
	security	accommodation etc.) Evidence of violations of obligations to workers under labour or social	1									
		security laws and employment regulations. Percentage of permanent workers receiving paid time-off	-									
						ь		ь—	-	ш		



		Presence of publicly available documents as promises or agreements on										
		sustainability issues										
	Public commitments to	Complaints issued related to the non-fulfilment of promises or		1	(√)	(V)	-	(v)	-	1	1	
	sustainable issues	agreements by the organization by the local community or other	1		٠,	٠,		١, ,				
		stakeholders at OECD contact points or Global Reporting Initiative. Presence of mechanisms to follow-up the realisation of promises										
		Is the organization doing business in a region with ongoing conflicts?	-					-	-			-
		is the organization doing business in a region with organization doing business in a sector that features linkages to	-									
		conflicts (e.g. where the depletion of resources allows significant profits										
		- extractive industries, forestry, fishery)?										
	Prevention and mitigation						/	_	١.	/		
	of armed conflicts	Is the organization doing business in a sector otherwise linked to the escalation or de-escalation of conflicts (e.g. conflict escalation by		1	(✓)	~	_	· ·	~	~	1	
		massive pollution, de-esclation by trade beyond conflict boundaries)?	1									
		Organization's role in the development of conflicts	-									
		Disputed products	-									
		Economic situation of the country/region (GDP, economic growth,										
Society	Contribution to Economic	unemployment,)	4	3	✓	(V)	(√)	/	(~)	/	3	5
Š	Development	Contribution of the organization to the economic progress	1	-			' '		l` ′			_
									-			
		Risk of corruption in the country and/or sub-region	3	-								
		Risk of corruption in the sector	6									
		Formalized commitment of the organization to prevent corruption	1									
	Corruption	The organization carries out an anti-corruption program	1	5	✓	~	✓	✓	V	~	6	
		The organization installs or cooperates with internal and external	1									
		controls to prevent corruption	1									
		Written documents on active involvement of the organization in										
		corruption and bribery										
		Financial damages	-									
		Sector efforts in technology development	-				l	1	l			
	Technology development	Involvement in technology transfer program or projects	1	1	/	/	(V)	/	١.	/	1	
		Partnerships in research and development	1		l	*	(')	'	1		•	
		Investments in technology development/ technology transfer	1									

Figure A8. S-LCA Impact Assessment of Internal Partner 8 – FINAL SCORE 4

						Imp	act Ca	tegorie	es			
Stakeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	wc	нѕ	HR	SER	IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	3									
	Delocalization and Migration	Direct or indirect contribution of the organization to migration of individuals	2	3	1	(✓)	(√)	1	1	(√)	3	
		Strength of organizational procedures for integrating migrant workers into the	2									
		Public Trust on Politicians	,									
	Community engagement		2	3	(√)	1	(✓)	1	(✓)	✓	3	
	engagement	Organizational support (volunteer-hours or financial) for community initiatives	2									
		Collaboration with community stakeholders	3									
		Policies in place to protect cultural heritage and/or programs to include cultural	_						П			
	Cultural heritage	heritage expression in the product design/production	2	2	-	-	(√)	1	1	1	2	
		Respect of cultural customs and traditions	1									
		Unemployment Statistics by Country	1									
			1									
		Poverty and Working Poverty by Country										
			1	2	1	1.0	(√)	/	1	1		
	Local employment			2	ľ	(*)	(*)			•	1	
₹		Strength of policies on local hiring preferences (organization-specific indicator)										
ě			3									
Ē		Contribution to the reduction of local unemployment	3									3
Local Community		Patent Filings	1									
9	Access to immaterial			1			/	/		/	1	
	resources	Presence/strength of community education initiatives	1	1	(√)	(✓)	·	•	(√)	~	1	
		Guarantee freedom of expression of the local community	1									
		Has the organization caused infrastructures improvements (e.g. roadways, waste										
	Access to material	disposal systems) having long term effects?	5	4	-	(√)	/	/	1	(V)	4	
	resources	Commitment in minimizing the resources consumption	1	,	-	(-)	-	ľ	ľ	(-)	•	
		Burden of Disease by Country				-			┝			
		Burden of Disease by Country	1									
		Pollution Levels by Country										
	Safe and healthy living		1	2	1	/	/	1	(√)	10		
	conditions	Commitment in strengthening committee hould not minimize the		-					()	. ,	•	
		Commitment in strengthening community health and minimise the environmental pollution	1									
		Presence of policies/regulations for safety										
			3									
		Strength of Public Security in Country of operation	•						t			
			1									
	Secure living conditions			1	(√)	✓	1	(✓)	(√)	(√)	1	
		Management policies related to private security personnel	-									
		Number of causalities and injuries per year ascribed to the organization	1									
		Documented statement or procedures (policy, strategy etc.) to prevent engaging										
	Fair competition	in or being complicit in anticompetitive behaviour	2	2	1	1	/	1		/	1	
	rair competition	Employee awareness of the importance of compliance with competition		2	ľ		,			•	1	
		legislation and fair competition.	1									
		Approach to general intellectual property rights and related issues associated	1									
Si	Respect of intellectual	with the economic sector	-	2	(√)	-	-	1		1	2	
ğ	property rights	Organization's policy and practice with regards to the respect of intellectual	3		` ′							
ig.		property rights Mutual co-operation with the suppliers							1			3
5		iwataa co-operation with the suppliers	1									,
Value Chain Actors	Supplier relationships	Fair behaviour with the suppliers (absence of coercive communication, sufficient	1	1	(√)	(✓)	(✓)	1	-	1	1	
>		lead time, reasonable volume fluctuation, payments on time)	1									
		Presence of an explicit code of conduct that protect human rights of workers	2			1 -				ΙĪ		
	December of the last	among suppliers				1						
	Promoting social responsibility	Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	2	4	1	✓	✓	(✓)	(√)	~	4	
	responsibility		,		ı	1	1		1			
		Integration of ethical, social, environmental and gender-equality criterions in	5									



		Presence of consumer complaints (at national, sectorial, organizational level)	1									
	Health and safety	Quality of or number of information/signs on product health and safety	1	2		✓	(√)	1	-	1	2	
		Presence of management measures to assess costumer health and safety	2									
		Presence of a mechanism for customers to provide feedback	2									
	Feedback mechanism		2	2	(Y)	(✓)	1	1	-	1	2	
		Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	1									
		Country ranking related to regulations on data-sharing										
ers			1									
Consumers	Consumer privacy	Strength of internal management system to protect consumer privacy	2	1	-	-	1	(√)	-	1	1	2
Ö		Number of consumer complains related to breach of privacy or loss of data	1									
		within the last year Presence of a law or norm regarding transparency	1									
		Clear information to enable the consumer choice (e.g. presence of product										
	Transparency	certifications/labels, publication of annual sustainable reports, communication	1	3	(✓)	✓	✓	1	(✓)	1	3	
		of results of social and environmental life cycle impact assessment) Communications regarding the product and social responsibility in a transparent	4									
		way Do internal management systems ensure that clear information is provided to	*							_		
	End-of-Life	consumers on end-of-life options?	1	1	1	1	1	1	/	1	1	
	Responsibility	Presence of systems for the product take back										
		Evidence of Country non respect or support to Freedom of association and Collective bargaining	1									
	Freedom of association	Conective barganing			1	1	1	1	/	/		
	& collective bargaining	Evidence of restriction to freedom of association and collective bargaining	1	1	ľ	٧	•		*	Ť	1	
		Workers are free to join unions of their choosing and the presence of unions within the organization is adequately supported	1									
		Percentage of children working by country and sector	1									
	Child labour	Absence of working children under the legal age or 15 years old	1	1	1	1	1	1	✓	1	1	
		Living Wages	-						H	1		
			1									
							1.					
	Fair salary	Minimum wage by country		1	✓	(✓)	1	~	-	1	1	
			1									
		Presence of suspicious deductions on wages Regular and documented payment of workers	1									
		Guarantee that wage levels ensure a decent standard of living	1									
		Maximum number of working hours	1									
		Number of holidays effectively used by employees (at each level of employment).			1	1		1		/		
	Working hours		1	1	Ý	•	1	·	-	ľ	1	
		Maximum number of hours worked by employees and possible difference with the maximum number of hours effectively worked	1									
		Percentage (estimate) of forced labour by region										
			2									
99	Forced labour	Employment contracts stipulate wage, working time, holidays and terms of	1	2	1	✓	✓	1	✓	✓	1	
Workers		resignation Workers voluntarily agree upon employment terms and are free to terminate										3
>		their employment within the prevailing limits	1									
		Women in the Labour force participation rate by country										
			2									
	Equal	Country gender index ranking	_									
	opportunities/discrimin ation		2	3	~	1	1	1	✓	1	2	
		Presence of formal policies on equal opportunities	3									
		Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other	3									
		indicators of diversity	,									
		Absence of any kinds of discrimination	1							_		
		Occupational accident rate by country	_									
			5		1	1	1			- 1		
	Health and safety	Number/percentage of injuries or fatal accidents in the organization by job										
	1		-	4	~	1	/	1	-	1	4	
		qualification inside the company	2	4	1	~	1	1	-	1	4	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers	2	4	1	1	~	~	-	1	4	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g.		4	√	1	~	1	-	*	4	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers is low	2	4	*	√	✓	*		✓	4	
	Social henefits/social	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g.									4	
	Social benefits/social security	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g.	2	2	1			✓	· ·		1	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g.	2								1	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)	2								1	
	security	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on	2	2	~	~		*	~	(~)	1	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues	2 2 1 1		~						1	
	security Public commitments to	Qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises	2	2	~	~		*	~	(~)	1	
	security Public commitments to	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of menhanisms to follow-up the realisation of promises	2 2 1 1	2	~	~		*	*	(~)	1	
	security Public commitments to sustainable issues	Qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises	2 2 1 1	2	~	~		*	*	(~)	1	
	Public commitments to sustainable issues Contribution to	Qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises	2 2 1 1	2	~	· (*)	-	(*)	· ·	· (*)	1	
	security Public commitments to sustainable issues	Qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises Presence of mechanisms to follow-up the realisation of promises	2 2 1 1	2	· (*)	· (*)		(*)	*	· (*)	1	
As	Public commitments to sustainable issues Contribution to	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Sodal Security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,)	2 2 1 1	2	· (*)	· (*)	-	(*)	· ·	· (*)	1	
Society	Public commitments to sustainable issues Contribution to	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic Stutation of the country/region (GDP, economic growth, unemployment,)	2 2 1 1	2	· (*)	· (*)	-	(*)	· ·	· (*)	1	1
Анроз	Public commitments to sustainable issues Contribution to	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Sodal Security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,)	2 2 1 1 1 1	2	· (*)	· (*)	-	(*)	· ·	· (*)	1	1
Aspos	Public commitments to sustainable issues Contribution to Economic Development	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,) Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,)	2 2 1 1 1	1	(v)	(*)	- (*)	(Y)	3	· ·	1	1
Sodety	Public commitments to sustainable issues Contribution to	cualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,) Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,) Risk of corruption in the country and/or sub-region Formalized commitment of the organization to prevent corruption/presence of	2 2 1 1 1 1	2	· (*)	· (*)	-	(*)	· ·	· ·	1	1
Sodety	Public commitments to sustainable issues Contribution to Economic Development	qualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,) Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,) Risk of corruption in the country and/or sub-region Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program	2 2 1 1 1 1 1 1 2 2 -	1	(v)	(*)	- (*)	(Y)	3	· ·	1	1
Aspos	Public commitments to sustainable issues Contribution to Economic Development	cualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,) Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,) Risk of corruption in the country and/or sub-region Formalized commitment of the organization to prevent corruption/presence of	2 2 1 1 1 1 1 1 1 2 2	1	(v)	(*)	- (*)	(Y)	3	· ·	1	1
Asapos	Public commitments to sustainable issues Contribution to Economic Development Corruption Technology	coalification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic Statustion of the country/region (GDP, economic growth, unemployment,) Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,) Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program. Involvement in cases of corruption Involvement in cases of corruption Involvement in cases of corruption Involvement in the development of efficient and environmental sound Engagement in the development of efficient and environmental sound	2 2 1 1 1 1 1 1 2	1	(v)	(*)	- (*)	(Y)	3	· ·	1	1
Society	Rubilic commitments to sustainable issues Contribution to Economic Development Corruption	cualification inside the company Adequate management system for health and safety, so that the risk of workers is low Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity) List and provide short description of social benefits provided to the workers (e.g. Health insurance, pension fund, child care, education, accommodation etc.) Presence of publicly available documents as promises or agreements on sustainability issues Presence of mechanisms to follow-up the realisation of promises Economic situation of the country/region (GDP, economic growth, unemployment,) Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,) Risk of corruption in the country and/or sub-region Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program Involvement in cases of corruption	2 2 1 1 1 1 1 2 1 1 1	1 1 2	(v)	(4)	- (*)	(Y)	3	· ·	1 1 1	1

Figure A9. S-LCA Impact Assessment of Internal Partner 9 – FINAL SCORE 3



			1		_	lm	act C	ategor	ies			
takeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	wc	нѕ	HR	SER	IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDEI
		International Migrants as a Percentage of Population	2									
	Delocalization and	Direct or indirect contribution of the organization to migration of individuals	2	2	1	(v)	(√)	1	1	(√)	1	
	Migration	Strength of organizational procedures for integrating migrant workers into the community	2				. ,					
	Community engagement	Public Trust on Politicians	5	4	(✓)	✓	(✓)	·	(✓)	1	4	
	engagement.	Organizational support (volunteer-hours or financial) for community initiatives	1									
		Collaboration with community stakeholders	1									
	Cultural heritage	Policies in place to protect cultural heritage and/or programs to include cultural heritage expression in the product design/production	1	1			(√)	1	1	1	1	
		Respect of cultural customs and traditions	-									
	Respect of indigeneous	Policies in place to protect the rights of indigeneous community members	-		(✓)	(√)	/	(√)	1	(v)		
hinity	rights	Respect of indigenous rights, including the rights to lands, resources, cultural integrity, self-determination, and self-government	1	*	(-)	()		(-)	ľ	(-)	•	
Local Community		Unemployment Statistics by Country	2									3
ocalC		Poverty and Working Poverty by Country	2		1			,	/	1		
_	Local employment	Strength of policies on local hiring preferences (organization-specific indicator)	1	2	v	(*)	(✓)	1	•	•	1	
		Contribution to the reduction of local unemployment	1									
		Patent Filings	3						1			
	Access to immaterial	Presence/strength of community education initiatives	2	3	(√)	(V)	1	1	(V)	1	3	
	resources	Guarantee freedom of expression of the local community	-									
	Access to material	Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects?	1	1		(v ′)	/	/	1	(Y)	1	
	resources	Commitment in minimizing the resources consumption	1			ľ,				. ,		
		Burden of Disease by Country	1									
	Cofe and broken to the	Pollution Levels by Country	1									
	Safe and healthy living conditions	Commitment in strengthening community health and minimise the environmental pollution	1	1	1	~	~	1	(✓)	(✓)	1	
		Presence of policies/regulations for safety	_									
		Strength of Public Security in Country of operation	1									
	Secure living conditions	Management policies related to private security personnel	-	1	(√)	1	1	(√)	(V)	(√)	1	
		Number of causalities and injuries per year ascribed to the organization	-		,			. ,	,	,		
	Fair competition	Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	1	1	/	1	/	1		1	1	
		Employee awareness of the importance of compliance with competition legislation and fair competition.	1									
tors	Respect of intellectual property rights	Approach to general intellectual property rights and related issues associated with the economic sector Organization's policy and practice with regards to the respect of intellectual	1	1	(✓)	-		1	-	1	1	
¥		property rights	1		<u> </u>	Ц.	Щ.	Ш_	<u>L</u>	L		
Ē		Mutual co-operation with the suppliers	1			I	١	1 .	1	Ι-		1
/alue Chain Actors	Supplier relationships	Fair behaviour with the suppliers (absence of coercive communication, sufficient	1	1	(✓)	(✓)	(✓)	1	-	1	1	
Val		lead time, reasonable volume fluctuation, payments on time) Presence of an explicit code of conduct that protect human rights of workers among suppliers	1									
	Promoting social responsibility	Percentage of suppliers that the organization has audited with regard to social	-	1	~	~	1	(√)	(✓)	1	1	
		responsibility along the supply chain Integration of ethical, social, environmental and gender-equality criterions in				1						
		purchasing policy, distribution policy and contract signatures	1									



		Presence of consumer complaints (at national, sectorial, organizational level)	1									
	Health and safety	Quality of or number of information/signs on product health and safety	1	1	-	1	(√)	1		~	1	
		Presence of management measures to assess costumer health and safety	1									
		Presence of a mechanism for customers to provide feedback	1			<u> </u>						
	Feedback mechanism	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	1	1	(✓)	(✓)	1	1	-	~	1	
Consumers		Country ranking related to regulations on data-sharing	1			1						1
Cons	Consumer privacy	Strength of internal management system to protect consumer privacy Number of consumer complains related to breach of privacy or loss of data	1	1	-	-	1	(√)	-	1	1	
		within the last year	-			_						
	Transparency	Presence of a law or norm regarding transparency Clear information to enable the consumer choice (e.g. presence of product certifications/labels, publication of annual sustainable reports, communication of results of social and environmental life cycle impact assessment)	1	1	(✓)	~	1	1	(√)	~	1	
		Communications regarding the product and social responsibility in a transparent way	1									
	End-of-Life Responsibility	Do internal management systems ensure that clear information is provided to consumers on end-of-life options?	1	1	1	/	1	1	1	1	1	
	Responsibility	Presence of systems for the product take back Evidence of Country non respect or support to Freedom of association and	-									
	Freedom of association	Collective bargaining	1	,	_	/	/	/	,	/	,	
	& collective bargaining	Evidence of restriction to freedom of association and collective bargaining Workers are free to join unions of their choosing and the presence of unions	1		'	ľ		•	ľ	ľ	1	
		within the organization is adequately supported Percentage of children working by country and sector	1			-						
	Child labour		1	1	1	~	1	✓	1	~	1	
		Absence of working children under the legal age or 15 years old Living Wages	2			H						
		Minimum wage by country	2									
	Fair salary	Presence of suspicious deductions on wages	1	2	1	(✓)	1	✓	-	✓	1	
		Regular and documented payment of workers Guarantee that wage levels ensure a decent standard of living	1									
		Maximum number of working hours	2			-						
	Working hours	Number of holidays effectively used by employees (at each level of employment).	1	2	1	/	1	/	_	/	1	
	_	Maximum number of hours worked by employees and possible difference with the maximum number of hours effectively worked	1									
55		Percentage (estimate) of forced labour by region Employment contracts stipulate wage, working time, holidays and terms of	2									
Workers	Forced labour	resignation Workers voluntarily agree upon employment terms and are free to terminate	1	2	✓	1	1	~	1	1	1	3
		their employment within the prevailing limits Women in the Labour force participation rate by country	2			-						
		Country gender index ranking	2									
	Equal opportunities/	Presence of formal policies on equal opportunities	1									
	discrimination	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other indicators of diversity	3	2	✓	~	1	~	✓	~	1	
		Absence of any kinds of discrimination	1									
		Occupational accident rate by country Number/percentage of injuries or fatal accidents in the organization by job	5									
	Health and safety	qualification inside the company	2	4	1	~	1	✓	-	1	4	
		Adequate management system for health and safety, so that the risk of workers is low	1									
	Social benefits/social	Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)	2									
	security	List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education, accommodation etc.)	2	2	V	1	~	1	1	(✓)	1	
	Public commitments to sustainable issues	Presence of publicly available documents as promises or agreements on sustainability issues	1	1	(√)	(√)	-	(√)	-	/	1	
	Prevention and mitigation of conflicts	Presence of mechanisms to follow-up the realisation of promises In case the organization is located in regions with a high risk of conflicts due to resource depletion, massive pollution or poor working standards, does it try to	-	-	(✓)	√	1	1	✓	✓	-	
	minigation or comflets	reduce the risk by dint of appropriate measures Economic situation of the country/region (GDP, economic growth,	1			<u> </u>						
	Contribution to Economic Development	unemployment,) Contribution to the local economic progress, through different aspects (e.g.		1	~	(✓)	(✓)	1	(✓)	1	1	
Society		payment of wages, purchase of raw materials and supplies, investments,)	-		-	1			1	Н		1
Ş	Corruption	Risk of corruption in the country and/or sub-region Formalized commitment of the organization to prevent corruption/presence of	3	2	,	/	1	/	,	1	1	
	Corruption	an anti-corruption program Involvement in cases of corruption	1	-	ľ	ľ	•			ĺ .	,	
		Involvement in cases of corruption Involvement in technology transfer program or projects	1			T			T			
	Technology	Engagement in the development of efficient and environmental sound technologies	1	1	1	~	(√)	1		~	1	
	development	Investments in technology development/ technology transfer	1									
	1	Figure A10 S-LCA Impact Assessmen			Щ.	-	<u> </u>	<u>. </u>	<u>—</u>	Ļ		

Figure A10. S-LCA Impact Assessment of Internal Partner 10 – FINAL SCORE 2



				Performance	_			Categ			Impact Assessment	
Stakeholder	Sub- Categories	Indicators	Inventory	Assessment (PA)	wc	HS	HR	SER	IR	G	(IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	2									
	Delocalization and Migration	Direct or indirect contribution of the organization to migration	1	2	1	(✓)	(√)	1	1	(✓)	1	
	Wilgiation	of individuals Strength of organizational procedures for integrating migrant		-								
		workers into the community	-									
		Public Trust on Politicians										
			5									
	Community engagement	Organizational support (volunteer-hours or financial) for	1	4	(✓)	1	(✔)	1	(′)	1	5	
		community initiatives Collaboration with community stakeholders	1	-								
		Policies in place to protect cultural heritage and/or programs	-				-	<u> </u>	-			
	Cultural heritage	to include cultural heritage expression in the product design/production	1	1			(~)	/	/	1	1	
	_	Respect of cultural customs and traditions	1				ľ					
		Unemployment Statistics by Country	-				1	t				
		, , , , , , , , , , , , , , , , , , , ,	2									
		Poverty and Working Poverty by Country										
	Local employment		1	2	1	(✓)	(√)	1	~	✓	1	
>												
Local Community		Strength of policies on local hiring preferences (organization-		-								
W _O		specific indicator)	1									4
<u>ea</u>		Contribution to the reduction of local unemployment	1									
2		Patent Filings	3									
	Access to immaterial resources	Presence/strength of community education initiatives		2	(√)	(√)	~	1	(~)	1	1	
	resources	Consider for dear of consider of the level consider.										
		Guarantee freedom of expression of the local community Has the organization caused infrastructures improvements	1			\vdash	H		-			
	Access to material	(e.g. roadways, waste disposal systems) having long term	5	4	_	(V)	1	1	1	(✓)	4	
	resources	effects? Commitment in minimizing the resources consumption	1	*		()	ľ	ľ	*	(-)	4	
		Burden of Disease by Country	1				-	<u> </u>	-	-		
		, , , , , , , , , , , , , , , , , , , ,	1									
			•									
		Pollution Levels by Country										
	Safe and healthy		3	2	1	1	1	1	(~)	(✓)	1	
	living conditions								ľ	1 /		
		Commitment in strengthening community health and	1									
		minimise the environmental pollution Presence of policies/regulations for safety										
			1									
		Strength of Public Security in Country of operation										
			3									
	Secure living conditions			2	(√)	1	~	(✓)	(~)	(✓)	2	
		Management policies related to private security personnel Number of causalities and injuries per year ascribed to the	-	-								
		organization	1									
		Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive	1					1				
	Fair competition	behaviour	•	1	✓	1	~	1	-	✓	1	
		Employee awareness of the importance of compliance with	1									
		competition legislation and fair competition. Approach to general intellectual property rights and related					1	t				+
	Respect of	issues associated with the economic sector										
ь	intellectual property	,		1	(√)	-	-	1	-	1		
Value Chain Actors	rights	Organization's policy and practice with regards to the respect of intellectual property rights										
Chain		Mutual co-operation with the suppliers	1			H	┝	1	┝	+		1
lue C	Supplier	Fair behaviour with the suppliers (absence of coercive		1	100	100	100	/		/	1	
Na	relationships	communication, sufficient lead time, reasonable volume	1	1	(*)	(✓)	(*)	Ίľ	-	•	1	
		fluctuation, payments on time) Presence of an explicit code of conduct that protect human				\vdash	H	\vdash	H	+		
		rights of workers among suppliers	1					1				
	Promoting social	Percentage of suppliers that the organization has audited with	2	2	/	/	/	100	10	1	1	
	responsibility	regard to social responsibility along the supply chain Integration of ethical, social, environmental and gender-			ľ	ľ	ľ	(*)	(*)	1	1	
		equality criterions in purchasing policy, distribution policy and	1				1	1				
	1	contract signatures										



		Presence of consumer complaints (at national, sectorial, organizational level)	1									
	Health and safety	Quality of or number of information/signs on product health	1	1		1	(✓)	1	-	1	1	
		and safety Presence of management measures to assess costumer health										
		and safety Presence of a mechanism for customers to provide feedback	1									
	Feedback mechanism	Practices related to customer satisfaction, including results of	1	1	(✔)	(✓)	1	✓	-	✓	1	
		surveys measuring customer satisfaction Country ranking related to regulations on data-sharing										
			2									
mers	Consumer privacy	Strength of internal management system to protect consumer		2	-	-	✓	(✓)	-	✓	2	
Consumers		privacy	1	-								2
		Number of consumer complains related to breach of privacy or loss of data within the last year	1									
		Presence of a law or norm regarding transparency	1									
		Clear information to enable the consumer choice (e.g. presence of product certifications/labels, publication of					١,					
	Transparency	annual sustainable reports, communication of results of social and environmental life cycle impact assessment)	1	1	(✔)	1	1	•	(✓)	•	1	
		Communications regarding the product and social	1									
		responsibility in a transparent way Do internal management systems ensure that clear										
	End-of-Life Responsibility	information is provided to consumers on end-of-life options?	-	2	1	1	✓	✓	1	✓	1	
		Presence of systems for the product take back Evidence of Country non respect or support to Freedom of	2									
		association and Collective bargaining	1									
	Freedom of											
	association & collective bargaining	Evidence of restriction to freedom of association and collective bargaining	1	1	✓	1	1	1	1	~	1	
		Workers are free to join unions of their choosing and the presence of unions within the organization is adequately	2									
		supported Percentage of children working by country and sector					Н					
	Child labour		1	1	1	1	1	1	/	1	1	
		Absence of working children under the legal age or 15 years old	1									
		Living Wages										
			2									
	Fair salary	Minimum wage by country		2	~	(✓)	~	✓	-	✓	1	
		Presence of suspicious deductions on wages Regular and documented payment of workers	1 1	_								
		Guarantee that wage levels ensure a decent standard of living	1									
		Maximum number of working hours	1									
	Working hours	Number of holidays effectively used by employees (at each level of employment).	1		1	1	1	/		/	1	
	Working Hours	Maximum number of hours worked by employees and	1	•	ľ		ľ	•		•	•	
		possible difference with the maximum number of hours effectively worked										
		Percentage (estimate) of forced labour by region	2									
	Forced labour	Employment contracts stipulate wage, working time, holidays		2	1	1	/	/	1	/	1	
Workers	roiced labour	and terms of resignation Workers voluntarily agree upon employment terms and are	1	-	ľ	•	ľ	•	•	•	1	4
×		free to terminate their employment within the prevailing limits	1									
		Women in the Labour force participation rate by country	,				П					
			4									
	Equal	Country gender index ranking	_									
	opportunities/discri mination		2	4	✓	1	1	1	1	1	5	
		Presence of formal policies on equal opportunities Composition of governance bodies and breakdown of	5									
		employees per category according to gender, age group,	4									
		minority, group membership and other indicators of diversity										
		Absence of any kinds of discrimination Occupational accident rate by country	1				Н					
			3									
	Health and safety			2	1	1	✓	1	-	1	1	
		Number/percentage of injuries or fatal accidents in the organization by job qualification inside the company	1									
		Adequate management system for health and safety, so that the risk of workers is low	1									
		Social security expenditure by country and branches of social security (e.g. Healthcare, sickness, maternity)										
		,	2									
	Social benefits/social		2	4	/	1	1	1	1	(✓)	5	
	security									. ,		
		List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care,	5									
		education, accommodation etc.)										



	Public commitments	Presence of publicly available documents as promises or agreements on sustainability issues	5	5	100	10		(✓)		~	5	
	to sustainable issues	Presence of mechanisms to follow-up the realisation of promises	5	,	(*)	(*)		(*)	-	•	3	
	Prevention and mitigation of conflicts	In case the organization is located in regions with a high risk of conflicts due to resource depletion, massive pollution or poor working standards, does it try to reduce the risk by dint of appropriate measures	-	-	(✔)	1	>	~	~	~		
Society	Contribution to Economic Development	Economic situation of the country/region (GDP, economic growth, unemployment,)	4	3	√	(✓)	(✓)	~	(✓)	~	3	4
Ж		Contribution to the local economic progress, through different aspects (e.g. payment of wages, purchase of raw materials and supplies, investments,)	1									
	Corruption	Risk of corruption in the country and/or sub-region	3	4	1	1	v	·	~	~	5	
		Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program	5									
		Involvement in cases of corruption	1		-		-	-				
		Involvement in technology transfer program or projects	1									
	Technology development	Engagement in the development of efficient and environmental sound technologies	1	1	✓	1	(✔)	✓	-	✓	1	
		Investments in technology development/ technology transfer	1									

Figure A11. S-LCA Impact Assessment of External Partner 1 – FINAL SCORE 3

	,									
		International Migrants as a Percentage of Population	2							
	Delocalization and	Direct or indirect contribution of the organization to migration of individuals	1	2	1	(V)	(V)	1	V (V)	1
	Migration	Strength of organizational procedures for integrating migrant workers into the	1							
		community	1							
		Public Trust on Politicians								
	Community		5							
	engagement			4	(√)	1	(✓)	✓	(√) ✓	4
		Organizational support (volunteer-hours or financial) for community initiatives	1							
		Collaboration with community stakeholders	1							
		Policies in place to protect cultural heritage and/or programs to include cultural	3							
	Cultural heritage	heritage expression in the product design/production		4	-	-	(✓)	1	1 1	4
		Respect of cultural customs and traditions	5							
		Unemployment Statistics by Country	2							
		Poverty and Working Poverty by Country	-	•						
	Local employment		2	2	1	(1)	(√)	1	11	1
	cocar employment			-		()	()			-
								l		
		Strength of policies on local hiring preferences (organization-specific indicator)	1							
		Contribution to the reduction of local unemployment	1							
		Patent Filings	3							
	Access to immaterial resources	Presence/strength of community education initiatives	1	2	(√)	(√)	1	1	(√) ✓	1
	resources	Guarantee freedom of expression of the local community	1	-						
		Has the organization caused infrastructures improvements (e.g. roadways, waste								
		disposal systems) having long term effects?	2							
	Access to material resources	Commitment in minimizing the resources consumption		3	-	(✓)	1	1	V (V)	3
	resources		3							
		Darker (Breeze & Const.								
		Burden of Disease by Country	1							
			_							
	Safe and healthy living	Pollution Levels by Country	•							
	conditions		1	1	1	✓	1	1	(√) (√)	1
		Commitment in strengthening community health and minimise the								
		environmental pollution	1							
		Presence of policies/regulations for safety	1							
		Strength of Public Security in Country of operation						l		
	Secure living conditions		1	2	(√)	1	1	(√)	(V) (V)	2
		Management policies related to private security personnel	3		()	1	•	[' '	C 76.7	
		Number of causalities and injuries per year ascribed to the organization	1					<u> </u>	Ш	
_		Documented statement or procedures (policy, strategy etc.) to prevent engaging	4							
	Fair competition	in or being complicit in anticompetitive behaviour Employee awareness of the importance of compliance with competition		3	1	1	✓	1	. 🗸	3
		Employee awareness of the importance of compliance with competition legislation and fair competition.	1					l		
		Approach to general intellectual property rights and related issues associated	2					l –		
	Respect of intellectual	with the economic sector	- 4	2	(√)	-	-	1	. 🗸	2
	property rights	Organization's policy and practice with regards to the respect of intellectual	2		l`′			l		
		property rights Mutual co-operation with the suppliers	1			 		 		
	Supplier relationships	Fair behaviour with the suppliers (absence of coercive communication, sufficient		1	(√)	(V)	(√)	1	. 🗸	1
		lead time, reasonable volume fluctuation, payments on time)	1			Ľ				
								1		
		Presence of an explicit code of conduct that protect human rights of workers	3		ı					
		among suppliers	3							
	Promoting social	among suppliers Percentage of suppliers that the organization has audited with regard to social	5	4	,	,	,	IV.	15) 5	4
		among suppliers		4	1	~	1	(✓)	(×) ×	4
	Promoting social responsibility	among suppliers Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain		4	1	1	~	(✓)	(×) ×	4



							_					
		Presence of consumer complaints (at national, sectorial, organizational level)	1									
	Health and safety	Quality of or number of information/signs on product health and safety	-	1	-	1	(√)	1	-	1	1	
		Presence of management measures to assess costumer health and safety	1									
	Feedback mechanism	Presence of a mechanism for customers to provide feedback Practices related to customer satisfaction, including results of surveys measuring	1	4	(√)	(√)	1	1	-	/	4	
		customer satisfaction	5		` '	. ,						
ya.		Country ranking related to regulations on data-sharing	1									
Consumers	Consumer privacy	Strength of internal management system to protect consumer privacy	1	1	-	-	1	(✓)	-	1	1	3
Cons		Number of consumer complains related to breach of privacy or loss of data										
		within the last year Presence of a law or norm regarding transparency	1									
		Clear information to enable the consumer choice (e.g. presence of product										
	Transparency	certifications/labels, publication of annual sustainable reports, communication of results of social and environmental life cycle impact assessment)	1	3	(√)	~	1	✓	(√)	1	3	
		Communications regarding the product and social responsibility in a transparent	4									
	End-of-Life	way Do internal management systems ensure that clear information is provided to	1				H					
	Responsibility	consumers on end-of-life options? Presence of systems for the product take back	-	1	1	1	1	1	~	1	1	
		Evidence of Country non respect or support to Freedom of association and										
	Freedom of association	Collective bargaining	1		,	١,		,	,	,		
	& collective bargaining	Evidence of restriction to freedom of association and collective bargaining	1	1	1	1	'	1	1	1	1	
		Workers are free to join unions of their choosing and the presence of unions within the organization is adequately supported	1									
	Child labour	Percentage of children working by country and sector	1	1	1	/	/	/	1	/	1	
		Absence of working children under the legal age or 15 years old	1	· ·	Ĺ	Ľ	Ľ	Ť	Ĺ	Ĺ	·	
		Living Wages	1				1					
			2									
	Fair salary	Minimum wage by country	-	2	/	(√)	1	1		/	1	
	,,		2			()						
		Presence of suspicious deductions on wages Regular and documented payment of workers	1	-								
		Guarantee that wage levels ensure a decent standard of living	1									
		Maximum number of working hours	2									
	Working hours			2	1	1	/	/		/		
	Working hours	Number of holidays effectively used by employees (at each level of employment).	1	2	ľ	ľ	ľ	•	-	٠	1	
		Maximum number of hours worked by employees and possible difference with the maximum number of hours effectively worked	2									
		Percentage (estimate) of forced labour by region										
			2									
s	Forced labour	Employment contracts stipulate wage, working time, holidays and terms of	1	2	1	1	1	✓	~	1	1	
Workers		resignation Workers voluntarily agree upon employment terms and are free to terminate	1	-								3
>		their employment within the prevailing limits Women in the Labour force participation rate by country	-			ļ	-					
		, , , , , , , , , , , , , , , , , , , ,	_									
			2									
	5 and	Country gender index ranking										
	Equal opportunities/discrimin	Country gender index ranking	2	2	1	1	1	1	1	1	1	
	ation	Presence of formal policies on equal opportunities	1	-								
		Composition of governance bodies and breakdown of employees per category										
		according to gender, age group, minority, group membership and other indicators of diversity	1									
		Absence of any kinds of discrimination	1									
		Occupational accident rate by country	5									
						١.	١.					
	Health and safety	Number/percentage of injuries or fatal accidents in the organization by job	1	4	~	~	1	~	-	1	4	
		qualification inside the company Adequate management system for health and safety, so that the risk of workers	1									
		is low Social security expenditure by country and branches of social security (e.g.	1		-	1	<u> </u>		H			
		Healthcare, sickness, maternity)										
	Social benefits/social		2									
	security			2	1	1	1	1	~	(✓)	2	
		List and provide short description of social benefits provided to the workers (eg.	_									
		Health insurance, pension fund, child care, education, accommodation etc.)	2			L		L	L			
	Public commitments to	Presence of publicly available documents as promises or agreements on sustainability issues	5	5	1.0	10		10		/	5	
	sustainable issues	Presence of mechanisms to follow-up the realisation of promises	5	5	(√)	(✓)	L	(✓)	Ľ	Ť	5	
	Prevention and	In case the organization is located in regions with a high risk of conflicts due to			(√)	/	1	1	/	/		
	mitigation of conflicts	resource depletion, massive pollution or poor working standards, does it try to reduce the risk by dint of appropriate measures		-	()	Ľ	Ľ	Ľ	Ľ			
		Economic situation of the country/region (GDP, economic growth, unemployment,)										
			١.				1					
	Contribution to Economic Development		1	1	✓	(√)	(✓)	~	(✓)	1	1	
Society	200 Ionic Development											4
8		Contribution to the local economic progress, through different aspects (e.g.	1									4
		payment of wages, purchase of raw materials and supplies, investments,) Risk of corruption in the country and/or sub-region	<u> </u>			+	\vdash		H			
		, , , , , , , , , , , , , , , , , , , ,	3		l							
	Corruption	Formalized commitment of the organization to prevent corruption/presence of	4	3	1	~	1	✓	✓	1	2	
		an anti-corruption program Involvement in cases of corruption	1	+			1					
		Involvement in cases of corruption Involvement in technology transfer program or projects	1				\vdash		H			
l	Technology development	Engagement in the development of efficient and environmental sound	1	1	✓	~	(✓)	~	-	1	1	
	oc velopment	technologies Investments in technology development/ technology transfer	1		L	L	L					
		_			_	_	_			_		

Figure A12. S-LCA Impact Assessment of External Partner 2 – FINAL SCORE 4



						Imp	act C	ategori	es			
Stakeholder	Sub- Categories	Indicators	Inventory	Performance Assessment (PA)	wc	нѕ			IR	G	Impact Assessment (IA)	TOTAL STAKEHOLDER
		International Migrants as a Percentage of Population	2									
	Delocalization and Migration	Direct or indirect contribution of the organization to migration of individuals	1	5	~	(✓)	(✓)	1	/	(√)	6	
		Strength of organizational procedures for integrating migrant workers into the community	6									
		Public Trust on Politicians					H		H	H		
	Community		5	5	(✓)	1	(v ′)	/	(v)	/	6	
	engagement	Organizational support (volunteer-hours or financial) for community initiatives	6		, ,		` ′					
		Collaboration with community stakeholders	1									
	6 h	Policies in place to protect cultural heritage and/or programs to include cultural heritage expression in the product design/production	6	5			(v)	/	/	/	5	
	Cultural heritage	Respect of cultural customs and traditions	1	5	-	-	(*)	•	•	ľ	5	
		Unemployment Statistics by Country	2									
		Poverty and Working Poverty by Country	,									
₹	Local employment		2	5	1	(1)	(v)	1	/	/	6	
Local Community	cocar employment			,		(,	()		•	ľ	Ů	
E Co												5
-oca		Strength of policies on local hiring preferences (organization-specific indicator)	6									
_		Contribution to the reduction of local unemployment	1				_		<u> </u>			
	Access to immaterial	Patent Filings	3			١.	١.		١.	١.		
	resources	Presence/strength of community education initiatives	1	2	(√)	(√)	\ \	~	(✓)	1	1	
		Guarantee freedom of expression of the local community	1									
	Access to material	Has the organization caused infrastructures improvements (e.g. roadways, waste disposal systems) having long term effects?	1	1		(√)	/	1	/	(1	1	
	resources	Commitment in minimizing the resources consumption	1			()	Ľ		1	. ,		
		Burden of Disease by Country	1									
	Safe and healthy living conditions	Pollution Levels by Country	1	1	1	~	1	~	(√)	(√)	1	
		Commitment in strengthening community health and minimise the	1									
		environmental pollution Presence of policies/regulations for safety	1									
		Strength of Public Security in Country of operation							T			
	Carres living and distance		1	2	(√)	/	/	(v)		(√)	2	
	Secure living conditions	Management policies related to private security personnel	3	2	(*)	ľ	ľ	(*)	(*)	(*)	2	
		Number of causalities and injuries per year ascribed to the organization										
		Documented statement or procedures (policy, strategy etc.) to prevent engaging in or being complicit in anticompetitive behaviour	1			١,	١.			١.		
	Fair competition	Employee awareness of the importance of compliance with competition	1	1	1	1	ľ	~	-	1	1	
		legislation and fair competition. Approach to general intellectual property rights and related issues associated			_	-	-		-	-		
و	Respect of intellectual	with the economic sector	1	1	(√)			1		_		
Acto	property rights	Organization's policy and practice with regards to the respect of intellectual	1	1	(*)	1	-		-	ľ	1	
ie Bi		property rights Mutual co-operation with the suppliers	1			H	H	 	H	H		1
Value Chain Actors	Supplier relationships	Fair behaviour with the suppliers (absence of coercive communication, sufficient	1	1	(√)	(√)	(✓)	✓	-	1	1	
Valu	-	lead time, reasonable volume fluctuation, payments on time) Presence of an explicit code of conduct that protect human rights of workers				\vdash	\vdash		\vdash	┝		
	1	among suppliers	1							l		
	Promoting social responsibility	Percentage of suppliers that the organization has audited with regard to social responsibility along the supply chain	1	1	✓	1	~	(✓)	(✓)	1	1	
		Integration of ethical, social, environmental and gender-equality criterions in purchasing policy, distribution policy and contract signatures	1									



										_		
		Presence of consumer complaints (at national, sectorial, organizational level)	1									
				3		/	(v)	/		/	3	
	Health and safety	Quality of or number of information/signs on product health and safety Presence of management measures to assess costumer health and safety	4	3		ľ	(*)	•	-	ľ	3	
		Presence of management measures to assess costumer nearth and safety	1									
		Presence of a mechanism for customers to provide feedback	1							,		
	Feedback mechanism	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction	1	1	(√)	(✓)	ľ	~	-	1	1	
		Country ranking related to regulations on data-sharing	,									
Consumers			1				١.			١.		
nsuo	Consumer privacy	Strength of internal management system to protect consumer privacy	1	1	-	-	\ \	(✓)	-	1	1	5
٥		Number of consumer complains related to breach of privacy or loss of data within the last year	1									
		Presence of a law or norm regarding transparency	1									
		Clear information to enable the consumer choice (e.g. presence of product certifications/labels, publication of annual sustainable reports, communication	1									
	Transparency	of results of social and environmental life cycle impact assessment)	1	3	(✓)	1	1	✓	(✓)	1	3	
		Communications regarding the product and social responsibility in a transparent way	4									
	End-of-Life	Do internal management systems ensure that clear information is provided to	6							Г		
	Responsibility	consumers on end-of-life options? Presence of systems for the product take back	-	6	1	1	·	✓	1	1	6	
		Evidence of Country non respect or support to Freedom of association and										
	Freedom of association	Collective bargaining	1			١.	١.		١.	١.		
	& collective bargaining	Evidence of restriction to freedom of association and collective bargaining	1	1	1	1	'	✓	1	1	1	
		Workers are free to join unions of their choosing and the presence of unions within the organization is adequately supported	1									
		Percentage of children working by country and sector	1							Г		
	Child labour	Absence of working children under the legal age or 15 years old	1	1	1	1	~	1	~	1	1	
		Living Wages				H	t		H	Г		
			2							ĺ		
										ĺ		
	Fair salary	Minimum wage by country	2	2	1	(√)	1	✓	-	1	1	
		Presence of suspicious deductions on wages	1									
		Regular and documented payment of workers	1									
		Guarantee that wage levels ensure a decent standard of living Maximum number of working hours	1									
		Maximum number of working hours	2									
				2	1	/	/	/		/		
	Working hours	Number of holidays effectively used by employees (at each level of employment).	1	2	ľ	ľ	`	•	-	ľ	1	
		Maximum number of hours worked by employees and possible difference with the maximum number of hours effectively worked	1									
		Percentage (estimate) of forced labour by region										
			2									
	Forced labour	Employment contracts stipulate wage, working time, holidays and terms of	1	2	1	1	V	✓	1	1	1	
		resignation Workers voluntarily agree upon employment terms and are free to terminate										
ح		their employment within the prevailing limits	1									
Workers		Women in the Labour force participation rate by country										5
>			2									
		Country gender index ranking	,									
			2									
	Equal opportunities/discrimin	Presence of formal policies on equal opportunities	1	2	/	/	/	/	1	1	1	
	ation	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority, group membership and other										
		indicators of diversity										
			3									
							1		Ì	ĺ		
		Absence of any kinds of discrimination	1			<u> </u>	<u> </u>		L	L		
		Occupational accident rate by country	-							ĺ		
			5							ĺ		
	Health and safety	Number/percentage of injuries or fatal accidents in the organization by job	3	4	1	1	~	✓	-	1	4	
		qualification inside the company					1		Ì	ĺ		
		Adequate management system for health and safety, so that the risk of workers is low	1			L			L	L		
		Social security expenditure by country and branches of social security (e.g.				_			1	Ī		
	1	Healthcare, sickness, maternity)	2			1	1		Ì	ĺ		
	Social benefits/social		1	5	1	/	/	1	/	(√)	6	
	security					ľ			1	ľ		
	1	List and provide short description of social benefits provided to the workers (eg. Health insurance, pension fund, child care, education, accommodation etc.)	6			1	1		Ì	ĺ		
						╙	<u> </u>			L		
	Public commitments to	Presence of publicly available documents as promises or agreements on sustainability issues	6	6	(✔)	(√)		(✓)		1	6	
	sustainable issues	Presence of mechanisms to follow-up the realisation of promises	6		. ′	Ľ		. ,		_		
		Economic situation of the country/region (GDP, economic growth, unemployment,)								1		
										ĺ		
	Contribution to		1	1	1	(~)	(√)	1	(v)	1	1	
	Economic Development					ľ	ľ. <i>′</i>		ľ	ĺ		
₽		Contribution to the local economic progress, through different aspects (e.g.	_							ĺ		
Society		payment of wages, purchase of raw materials and supplies, investments,)	1			<u> </u>	_			L		5
		Risk of corruption in the country and/or sub-region	3							ĺ		
	Corruption	Familiard annulation of the control of		2	1	1	/	✓	1	1	1	
		Formalized commitment of the organization to prevent corruption/presence of an anti-corruption program	1							ĺ		
		Involvement in cases of corruption	1				1			L		
	Technology	Involvement in technology transfer program or projects Engagement in the development of efficient and environmental sound	6			١.	l			١.		
	development	technologies	1	5	1	1	(√)	✓	-	1	6	
		Investments in technology development/ technology transfer	6		L		L		_	Ļ		
		Figure A13 S-ICA Impact Assessment										

Figure A13. S-LCA Impact Assessment of External Partner 3 – FINAL SCORE 5