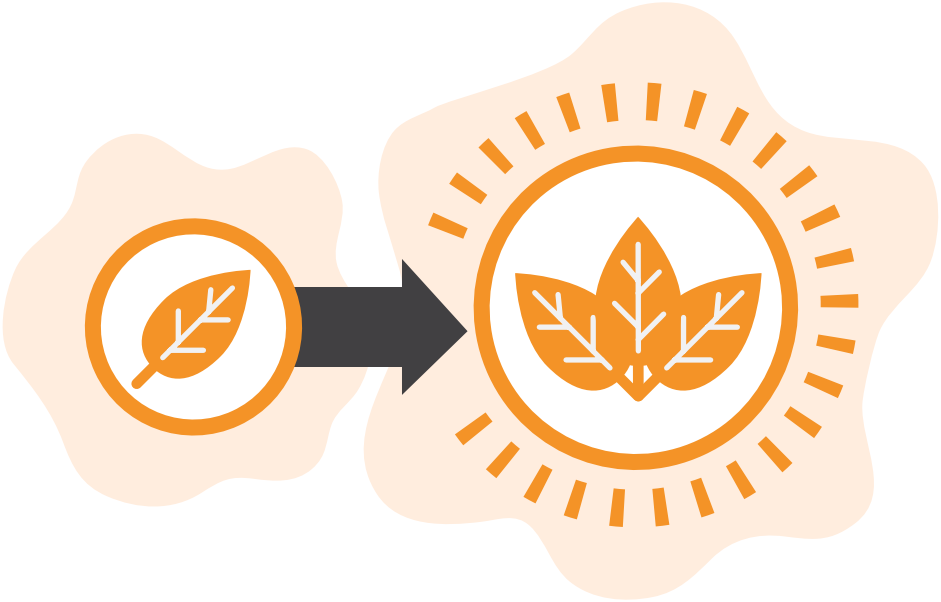
ST.6
Update the sustainability hotspots



Requires dialogue

This activity involves taking the analysis of the sustainability impacts and hotspots identified for the market and updating it with the company-specific impacts you have identified

INPUT

- List of specific environmental, social and economic impacts that occur across the value chain from the activity *PR.4 Identify sustainability hotspots across the value chain.*

OUTPUTS

- An updated, company-specific list of sustainability impacts with hotspots identified used for the activity *ST.7 Do a SWOT analysis.*

ST.6 Update the sustainability hotspots

An important part of understanding the operational performance of the company is to gather data about the life cycle sustainability impacts of the products the company offers and update the sustainability hotspots that you identified during the *PREPARE* phase. These data should be captured by updating the *Life Cycle Thinking template* already completed in the *PREPARE* phase for the value chain. This can either be done as an add-on activity to the workshop with staff described in the previous activity or can be done by the Service Provider alone. Either way, the aim is to identify any sustainability impacts and hotspots that were not identified during the analysis of the value chain sustainability hotspots.

HOW TO GO ABOUT IT

N.B. These instructions assume that the activity will be completed as part of the optional workshop with staff during the Preliminary Assessment. It can also be completed as an individual activity following a similar process.

1. Prior to the workshop you need to prepare a copy of the *Life Cycle Thinking template* on a large sheet of paper (a standard A1 size flipchart sheet is best as it provides sufficient space for a small group to work with). You will also need a large space to draw on, preferably a large whiteboard.
2. Introduce the exercise to the participants by explaining that a key aspect of eco-innovation involves considering the sustainability impacts of a product across its lifecycle. Explain that this exercise is intended to capture the main sustainability issues that occur across the product lifecycle.

Create the life cycle inventory

Ask the participants to help you draw a *Life Cycle Inventory template*, starting with the main manufacturing process steps that occur within the company's factory. For each process step make sure that you indicate what the inputs (materials, water and energy), product outputs (useful products and 'wastes'), and emissions (to air, soil and water) are.

3. Once you have completed the *Life Cycle Inventory template* for the activities that take place within the factory, try to extend the template forwards and backwards across the value chain by asking questions such as:
    - What happens to the products once they leave the factory?
    - Where does the customer buy the product from?
    - How does the product get from the factory to the customer?
    - What happens during the use of the product?
    - What happens to the product once the customer has finished using it?
    - Where do the raw materials come from?
    - What processes do the raw materials go through before arriving at your factory?
4. Use the *Life Cycle Inventory template* you have created to begin populating the first four columns of the *Life Cycle Thinking template*.

Identify the life cycle impacts and sustainability hotspots

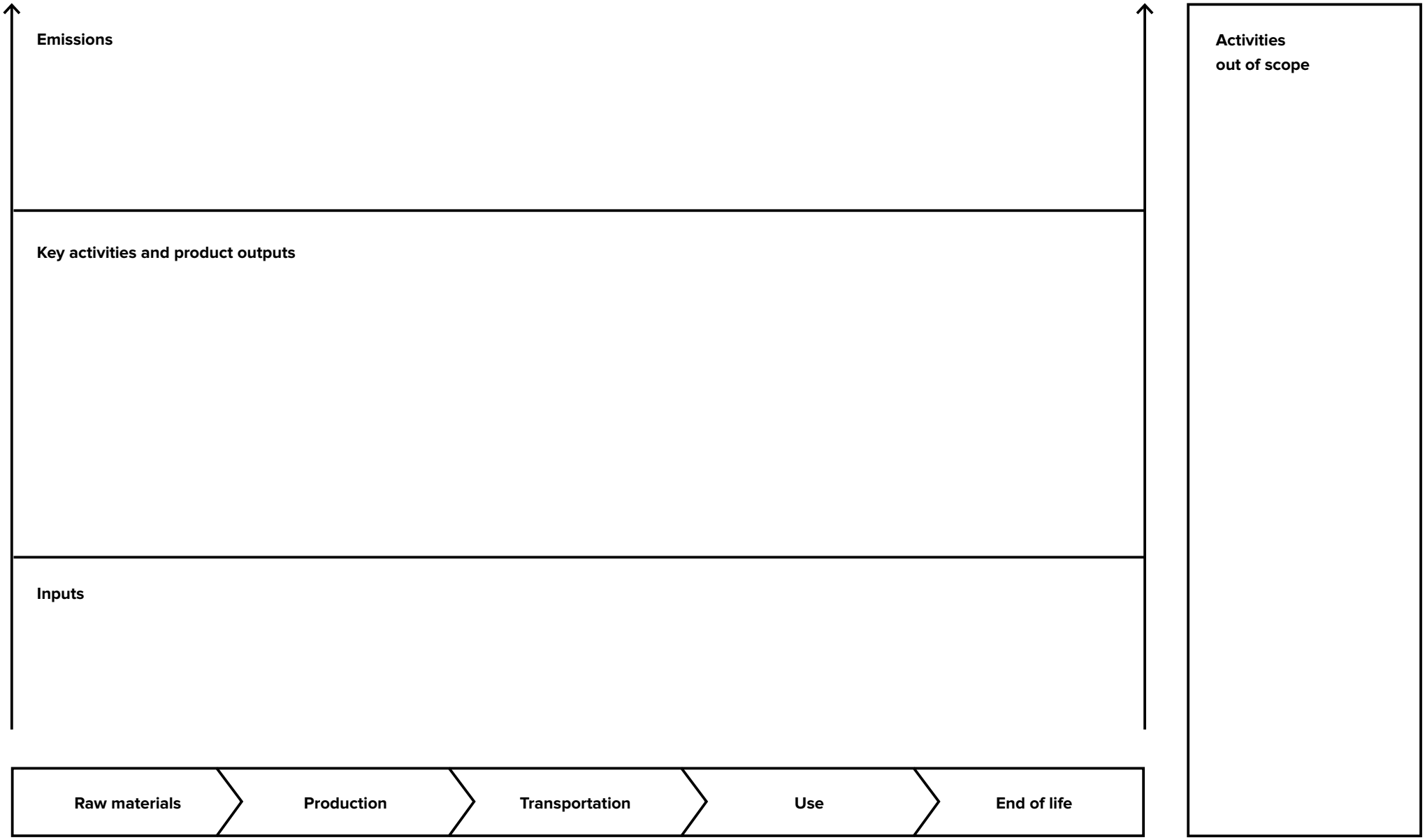
5. Ask the participants to provide examples of specific environmental, social and economic impacts that are associated with the activities and emissions at each stage of the product life cycle.

ST.6 Update the sustainability hotspots

6. Get the participants to make a note of the issues they suggest on a sticky note and place them in the relevant cell of the *Life Cycle Thinking template*.
7. Ask participants to rate each of the sustainability impacts using the scale 'Low', 'Medium' and 'High' impact. Tell the participants that any impact that must be controlled to comply with legislation or the conditions of a permit should automatically be given a 'High' rating. This is indicated in the example below by the letter in brackets, where: H= High, M= Medium, L=Low. A'+' sign indicates a positive sustainability impact
8. Ask the participants to decide where the sustainability hotspots are by:
    - Identifying cells of the Life Cycle Thinking matrix that contain several different medium or high-rated impacts.
    - Identifying activities or processes that lead to several different medium or high-rated impacts.
    - Encourage the participants to identify at least two sustainability hotspots that occur outside of the company, elsewhere in the value chain.
9. After the workshop combine the sustainability hotspots identified from the Life Cycle Thinking workshop with the hotspots identified for the value chain during the *PREPARE* phase.
10. Once you have identified the sustainability hotspots it can be worth revisiting the output of the *Life Cycle Stakeholders template* as this may provide some ideas for who might help the company to address the identified hotspots.

Life cycle inventory

Project _____ Date _____ Version _____



Used during activities
PR.4 and ST.6

Eco—i Templates

Life cycle thinking

Project _____ Date _____ Version _____

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**

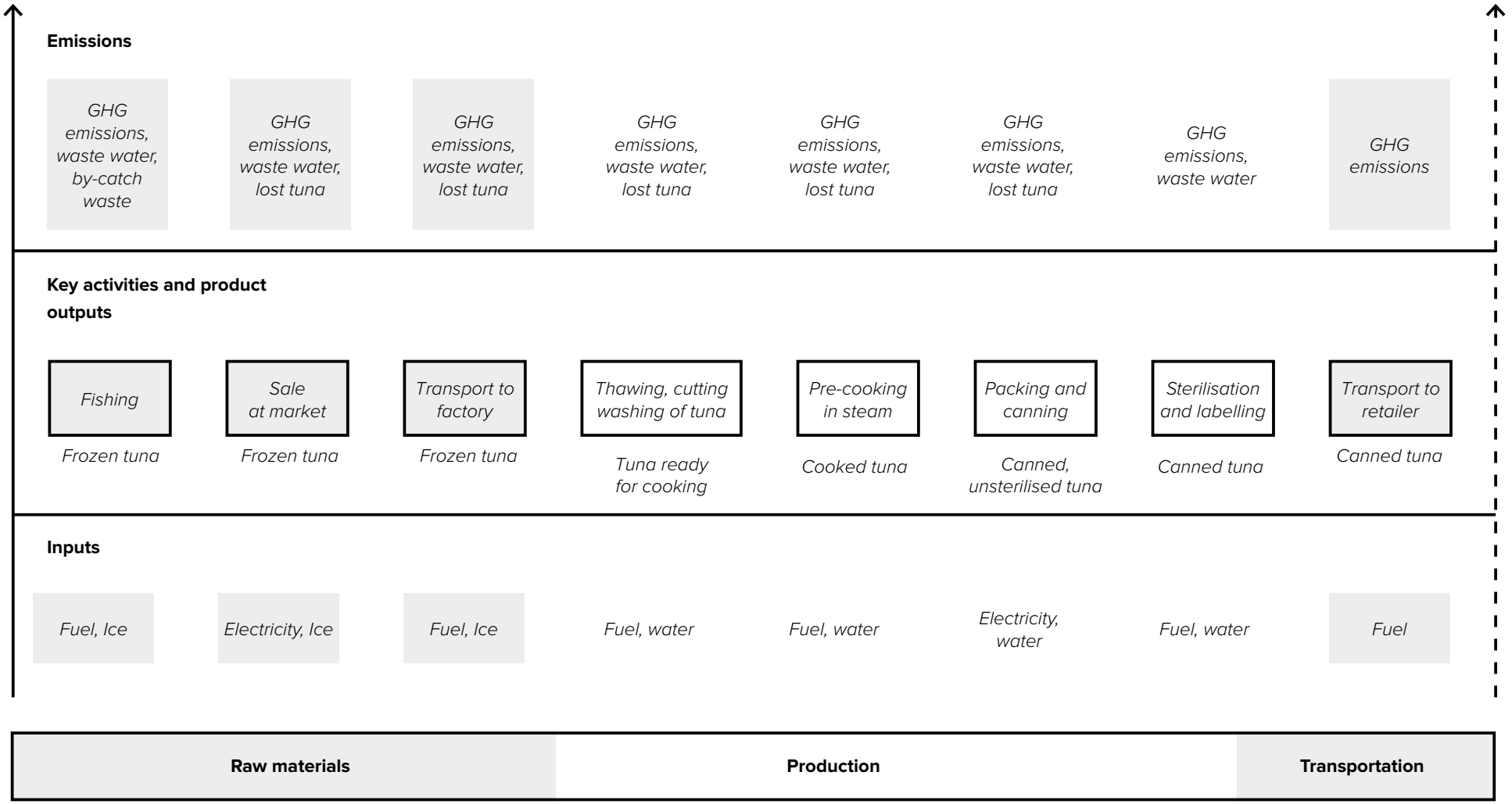
Used during activities

PR.4, ST.6, BM.3 and BM.15

ST.6 Update the sustainability hotspots

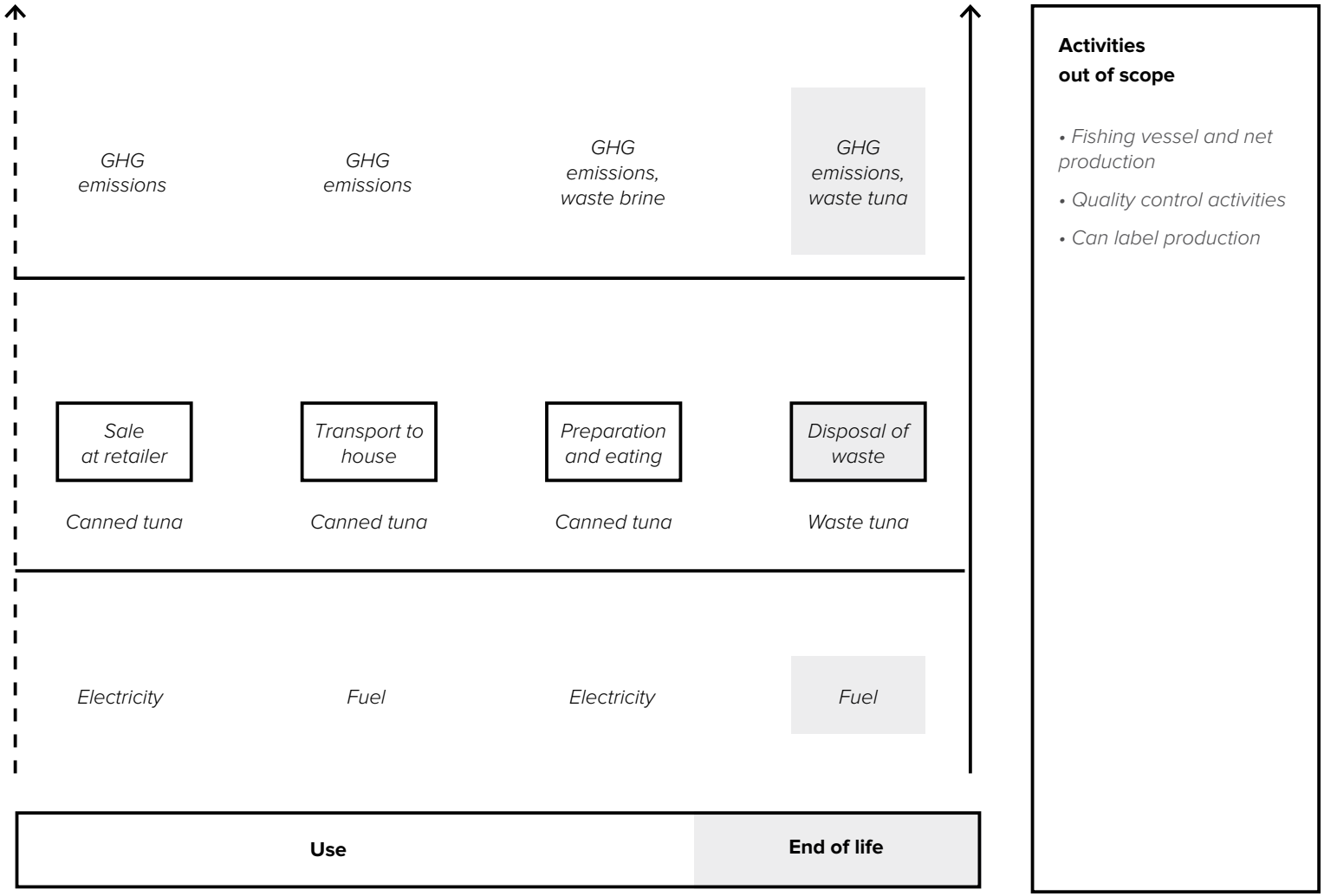
Eco—i Manual

LEARNING CASE STUDY OF LIFE CYCLE INVENTORY



ST.6 Update the sustainability hotspots

Eco—i Manual



Activities out of scope

- *Fishing vessel and net production*
- *Quality control activities*
- *Can label production*

ST.6 Update the sustainability hotspots

LEARNING CASE STUDY OF LIFE CYCLE THINKING

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Materials	• *Fishing*	• *Fuel (diesel)* • *Ice*	• *Frozen tuna (at dock)*	• *GHG emissions* • *Waste water* • *By-catch (wasted)*	• *Resource depletion - fossil fuels (M)*	• *Climate change (M)* • *Marine species extinction (H)*	• *Falling wages forcing fishers to leave industry (M)* • *Slavery like conditions on some fishing vessels (H)*			
	• *Sale at market*	• *Electricity (100% coal)* • *Ice*	• *Frozen tuna (at dock)*	• *GHG emissions* • *Waste water* • *Lost tuna*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*	• *Jobs secured at market (M)*		• *Noise - from early morning lorry movements (L)*	• *Rising cost of tuna - due to dwindling stocks (H)* • *+Revenue to fisher people (M)* • *Cost of lost tuna (M)*
	• *Transport to factory*	• *Fuel (diesel)* • *Ice*	• *Frozen tuna (at factory)*	• *GHG emissions* • *Waste water* • *Lost tuna*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*	• *Jobs secured for delivery driver (M)*			• *Cost of lost tuna (M)*

ST.6 Update the sustainability hotspots

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Production	• *Tuna thawing, cutting and washing*	• *Fuel (diesel) Water*	• *Tuna ready for cooking*	• *GHG emissions Waste water Lost tuna*	• *Resource depletion - fossil fuels (L) Water consumption (M)*	• *Climate change (L) Eutrophication (M)*	• *Jobs secured at factory (M)*			• *Cost of lost tuna (M)*
	• *Pre-cooking in steam*	• *Fuel (diesel) Water*	• *Cooked tuna*	• *GHG emissions Waste water Lost tuna*	• *Resource depletion - fossil fuels (H) Water consumption (L)*	• *Climate change (H) Eutrophication (L)*	• *Jobs secured at factory (M)*			• *Cost of lost tuna (M)*
	• *Packing and canning*	• *Electricity (100% coal) Water Salt Cans"*	• *Canned tuna (at factory)*	• *GHG emissions Waste water Lost tuna*	• *Resource depletion - fossil fuels (L) Water consumption (M)*	• *Climate change (L) Eutrophication (L)*	• *Jobs secured at factory (M)*			• *Cost of lost tuna (M)*
	• *Sterilisation and labelling*	• *Fuel (diesel) Water*		• *GHG emissions Waste water*	• *Resource depletion - fossil fuels (H) Water consumption (M)*	• *Climate change (H)*	• *Jobs secured at factory (M)*			

ST.6 Update the sustainability hotspots

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Transportation	• *Transport to retailer*	• *Fuel (diesel)* • *Pallets*	• *Canned tuna (at retailer)*	• *GHG emissions* • *Lost tuna (damaged cans)*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*	• *Jobs secured for delivery driver (M)*		• *Noise - from early morning lorry movements (L)*	• *Cost of lost tuna (M)* • *Cost of transportation (L)*
Use	• *Sale at retailer*	• *Electricity (100% coal)*	• *Canned tuna (at retailer)*	• *GHG emissions*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*	• *Jobs secured at retailer (M)*			• *Revenue to retailer (M)* • *Revenue to producer (M)*
Use	*Transport to house*	• *Fuel (petrol)*	• *Canned tuna (at house)*	• *GHG emissions*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*				
	Preparation and eating	• *Electricity (100% coal)*	• *Waste tuna (at home)*	• *GHG emissions*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*		• *Human health - consumption of tuna (L)* • *Human health risk - mercury content of tuna (M)*		
End of life	*Disposal of waste*	• *Fuel (diesel)*	• *Waste tuna (at landfill)*	• *GHG emissions*	• *Resource depletion - fossil fuels (L)*	• *Climate change (L)*	• *Jobs secured at waste management company (M)*		• *Bad odours from landfill site (L)*	

ST.6 Update the sustainability hotspots

In the table below, the sustainability hotspots for the Tasty Tuna Company are listed along with examples of stakeholders and ideas for how that stakeholder could help to address the relevant hotspot. Note that the hotspot concerning 'Lack of women in management roles at the company' was identified from the workshop with staff. This was given high importance because the company is reliant on their female production workers and they are not happy with the current situation as there appears to be no route to promotion for female staff.

Sustainability hotspot	**Stakeholder and how they could help**
Fishing activity	*Fisher people - transition to more sustainable fishing methods.*
	Fisheries Agency - create quota's for tuna fishing to avoid stock depletion.
Energy intensity of the production phase	*Retort oven supplier - provide training and maintenance services to ensure ovens are operated at optimum efficiency.*
Significant fish loss and waste	*Local government - Provide funding for cold-storage facilities*
	Retailer - Create consumer education programs about ways to reduce food waste.
Lack of women in management roles at the company	*Trade association - Provide training to senior management teams about the importance and benefits of implementing gender equality policies.*

ST.6 Update the sustainability hotspots

TIPS & TRICKS

HELP TO SPOT IMPACTS
If you are struggling to identify relevant issues, consider the following prompts:

- Where and when are the most significant costs incurred across the life cycle of the product?
- What are the most significant resources (energy, materials and water) consumed throughout the product life cycle?
- Where are resources being wasted or underutilized?
- Where are there toxic chemicals used and how are they prevented from impacting the environment or human health?
- How does the product value chain impact on local stakeholders?
- Are there some positive impacts as well as the negative?
- Which stakeholders benefit from the product, and which are negatively impacted? – see the results of the *Life Cycle Stakeholders template* to help you with this.

MULTIPLE IMPACTS
Where an issue sits across multiple cells, create copies of the note and place one in each of the relevant cells.

POSITIVE IMPACTS
Remember that impacts can be positive as well as negative. For example, "Jobs secured at factory" is a positive social impact that could be captured in the Production phase.

PAPER WHITEBOARD
If you do not have a whiteboard available several A1 flipchart sheets stuck next to each other onto a wall can also work.

KEEP IMPACTS SPECIFIC
Try to make the impacts you capture as specific and detailed as possible.

ST.6 Update the sustainability hotspots

BACKGROUND INFORMATION

References and resources

Hotspot analysis:

- UN Environment (2014). Hotspots Analysis: mapping of existing methodologies, tools and guidance and initial recommendations for the development of global guidance. UN Environment DTIE, Paris. Available from: http://www.lifecycleinitiative.org/wp-content/uploads/2014/12/UNEP-Hotspots-Mapping-Project-Final-Report-Phase-1.pdf

Life Cycle Assessment:

- Joint UN Environment-SETAC Life Cycle Initiative. Available from: http://www.lifecycleinitiative.org/
- UN Environment, (2009). Guidelines for Social Life Cycle Assessment of Products. UN Environment, Paris. Available from: http://www.unep.fr/shared/publications/pdf/DTIx1164xPA-guidelines_sLCA.pdf

→ Further information in the Agri-food and Metals Supplements

ST.6 Update the sustainability hotspots

Eco—i Agri-foods

TIPS & TRICKS

USE THE NEW INFORMATION GATHERED TO IDENTIFY HIGH SUSTAINABILITY IMPACTS

With the additional information gained by conducting a Walk-Through Audit and workshop at the company, revisit the Tips and Tricks from the activity PR.4 Identify sustainability hotspots across the value chain, and try again to identify which stage in the value chain has the highest sustainability impact. This could be closely linked to where most waste is generated, most energy is used or where the working conditions are stressful.

LEARNING CASE STUDY

After conducting the Walk-Through Audit and a workshop at Mango Pulp Co. you have updated the sustainability hotspots using the *Life Cycle Thinking* template.

Below the sustainability hotspots for the Mango Pulp Company are listed along with examples of stakeholder and ideas for how what stakeholder could help to address the relevant hotspot

Table 5. Sustainability hotspots for Mango Pulp Company and ideas how stakeholder could help to address them.

Sustainability hotspot	**Stakeholder and how they could help**
Risk of total yield loss at mango orchards	• *Farmers – put more effort into management of mango orchards* • *Farmer association – provide pest control training to farmers*
Unstable quality and quantity of supplied mango	• *Local government – give incentives to mango farmers to plant more suitable varieties of mango* • *Financial institution – provide credit to farmers*
Significant loss and waste	• *University – help with finding solutions for minimizing mango loss and waste in the value chain*
Concern about working condition due to use of chemical at farms and for ripening	• *Fertilizer and ripening agent supplier – provide organic solutions for fertilizing and ripening*

ST.6 Update the sustainability hotspots

Eco—i Chemicals

LEARNING CASE STUDY OF LIFE CYCLE THINKING

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Materials	*Cotton cultivation*	• *Fuel (diesel)* • *Water* • *Pesticides* • *Herbicides*	• *Cotton* • *Polyester* • *Textile chemicals*	• *GHG emissions* • *Waste water* • *Run-off residues* • *Cotton waste*	• *Farming water and agrochemical intensive (150g pesticides and 220o L water for a shirt) (M)* • *Petrochemical feedstock for polyester is non-renewable (M)* • *Solvent waste and wastewater from pigment production (M)*	• *Agro-chemical intensive farming leads to soil degradation and polluted water sources (M)*	• *Farmers often lack protective equipment and are exposed to toxic herbicides and pesticides (M)* • *Cotton farmers leaving industry replaced with automation, higer wages (L)*			• *Rising costs of synthetic feedstock and cotton (H)* • *Revenue to cotton farmers (M)* • *Cost of lost cotton (M)*
Production	*Fabric production (speaning / weaving)*	• *Electricity (100% coal)* • *Cotton* • *Lubricants*	• *Fabric*	• *GHG emissions* • *Dust* • *Yarn/fiber waste*	• *Resource depletion - fossil fuels (L)* • *Waste fabric (L)* • ***Polyester fibre waste from off-spec operation (L)***	• *Climate change (L)*				• *High electricity costs for fabric production (M)* • *Cost of fabric (L)* • ***Cost of lost polyester fibre (M)***

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Production	*Pre-treatment (sizing, bleaching, etc)*	• *Fabric* • *Agents* • *Sizing* • *Caustic* • *Soda* • *Peroxide* • *Stabilizing* • *Water* • *Fuel* • *Electricity*	• *Pre-treated fabric*	• *GHG emissions* • *Waste water* • *Caustic soda* • *Heavy metals* • *Organic waste*	• *Water consumption (M)*	• *NPEOs used in textile wet processing degrade into nonyphenol in the environment which is toxic to aquatic organisms and may cause harm to unborn children (H)*			• *NPEOs used in textile wet processing degrade into nonyphenol in the environment which is toxic to aquatic organisms and may cause harm to unborn children (H)*	
	Dyeing and printing	• *Pre-treated fabric* • *Salt* • *Dyestuff* • *Tensides* • *Solvents* • *Pigments* • *Water* • *Fuel* • *Electricity*	• *Dyed fabric*	• *GHG emissions* • *Waste water* • *Salt* • *Dyestuff* • *Tensides* • *VOC* • *Pigments*	• *Water consumption (M)* • ***Waste ink and solvent from ink production and ink printing (cleaning of equipment) (M)***	• *High biochemical oxygen demand of wastewater effluent affecting local aquatic environment (M)*	• *Azo dyes which degrade to form listed aromatic amines (e.g. benzidime), many of which cause or are suspected to cause cancer (H)* • ***VOC fugitive emissions impacting workers health due to lack of control technologies and PPE (M)***		• *Azo dyes which degrade to form listed aromatic amines (e.g. benzidime), many of which cause or are suspected to cause cancer (H)*	• ***Cost of waste ink and solvent from ink production & printing (M)***

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Production	*Garment manu-facturing*	• *Garments* • *Electricity*	• *Sold garments*	• *GHG emissions* • *Damaged / unsold garments*			• *Textile value chain employs a large number of low-skill labourers (H)*			• *Cost of lost fabric (H)*
	Finishing	• *Dyed Fabric* • *Resins* • *Catalysts* • *Enzymes* • *Softener* • *Tensides* • *Additives* • *Water* • *Fuel* • *Electricity*	• *Finished fabric*	• *GHG emissions* • *Waste water* • *Solid waste*					• *Conflict with local communities over waste water and sludge production (L)*	• *Waste water treatment costs (M)* • ***Disposal hazardous materials (M)***
Use	*Wholesale / Retail*	• *Garments* • *Electricity*	• *Sold garments*	• *GHG Emissions* • *Damaged / unsold garments*						• *Cost of lost / unsold garments (M)* • *Revenue to retailers (M)* • *Revenue to producers (M)*

ST.6 Update the sustainability hotspots

Eco—i Chemicals

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
End of life	*Disposal and recycling*	• *Used / Damaged garments* • *Fuel*	• *Waste garments*	• *GHG emissions*	• *Most clothes landfilled after use and not reused or recycled (H)*				• *Leachate from landfilled textiles can enter groundwater causing adverse health effects (L)*	

The *Life cycle Thinking* template just presented is completed for the TipTop Textiles Co., with the new, company-specific impacts in bold. The sustainability hotspots for the textiles value chain described in the case study are the same as those identified in the PREPARE phase:

- Raw material extraction: Cultivation of cotton is resource intensive (water, chemicals), degrades land and exposes farmers to harmful pesticides and herbicides
- Impact of chemicals used during production (and use): Nonylphenol ethoxylates (NPEOs) used in wet textile-processing are known to degrade in the environment to endocrine disruptors and formaldehyde used as a preservative during transport is suspected of causing cancer
- Use: High detergent and water use from washing clothes and high electricity consumption from tumble-drying of apparel
- End-of-life: Textiles typically discarded after 2 years of use and thrown in landfill without reuse or recycling. Further environmental and human health effects resulting from the decomposition of clothing in landfills

ST.6 Update the sustainability hotspots

Eco—i Chemicals

Below are some sustainability hotspots for the TipTop Textiles Co. listed along with examples of stakeholders and their possibilities to address the relevant hotspot.

Table 12: Selected sustainability hotspots for TipTop Textiles Co. and possibilities on how to address them

Sustainability hotspot	**Stakeholder and how they could help**
Impact of chemicals used during production (and use): nonylphenol ethoxylates (NPEOs) used in wet textile processing are known to degrade in the environment to endocrine disruptors; formaldehyde used as a preservative during transport is suspected of causing cancer.	International Brands: partnerships for eliminating and replacing chemicals on a textile industry's Restricted Substances Lists. Chemical suppliers - provide alternatives for NPEO-containing scouring agents and therefore eliminate discharge to aquatic environment.
Cultivation of cotton is resource intensive (water, chemicals), degrading land and exposing farmers to harmful pesticides and herbicides.	Cotton producers - source fair trade, organic cotton thereby minimizing environmental degradation and promoting better wage
End-of-life: textiles typically discarded after 2 years of use and thrown in landfill without reuse or recycling.	Waste plastic recyclers - provide a secondary feedstock, which can be used for synthetic-based textiles.

ST.6 Update the sustainability hotspots

Eco—i Metals

LEARNING CASE STUDY OF LIFE CYCLE THINKING

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Materials	*Extraction of raw materials*	• *Energy*	• *Raw materials*	• *Waste water* • *GHG emissions*	• *Unsustainable extraction of minerals, metal ores, hydrocarbons*	• *Impact on biodiversity* • *Claim of natural areas* • *Leaving exploited soils*	• *Bad working conditions for extraction* • *Health issues related to mining hazardous substances: mineral lubricants, solvents and lead points.*		• *Geopolitical conflict over natural resources*	• *Price volatility of raw materials* • *High prices of high tech materials (titanium/coal)*
Production	*Production of metals, rubber, plastics, various parts, chemicals (solvents, lead paints)*	• *Energy raw materials*	• *Metals* • *Rubber* • *Plastics* • *Various parts* • *Chemicals (solvents and lead paints)*	• *Hazardous waste (paints, solvents, chemicals for metal treatment)* • *Emissions (e.g. VOC)*	• *Unsustainable production*	• *Dumping of hazardous waste* • *Accumulation of substances in the soil and ground water*	• *Bad working conditions in production site* • *Gender issues* • *Safety issues: welding, paints, coating, solvents.*			

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Production	*Frame manufacturing*	• *Energy* • *Materials*	• *Metal waste frame*				• *Bad working conditions in production site* • *Gender issues* • *Safety issues: welding, paints, coating, solvents.*			
	Painting	• *Materials for paint*	• *Painting waste*	• *Waste water*	• *Lead for paints*	• *Dumping of hazardous waste* • *Accumulation of substances in the soil and ground water*	• *Bad working conditions in production site* • *Gender issues* • *Safety issues: welding, paints, coating, solvents.*			
	Wheel manufacturing	• *Raw materials*	• *Metal waste wheels*				• *Bad working conditions in production site* • *Gender issues* • *Safety issues: welding, paints, coating, solvents.*			
	Bike assembly	• *Frame and wheels*	• *Bike*				• *Bad working conditions in production site* • *Gender issues* • *Safety issues: welding, paints, coating, solvents.*			• *Low-cost competitors are threatening the already low net profit margin as well as market share*

					Environmental impacts		Social Impacts			Economic impacts
Phase	**Activity**	**Inputs**	**Product outputs**	**Emissions**	**Resource use**	**Ecosystem quality**	**On workers**	**On consumers**	**On stakeholders**	**Profitability**
Transportation	*Transport to retailer*	• *Fuel*	• *Bike (at retailer)*	• *GHG emissions* • *Metal scrap from damaged bikes*	• *Resource depletion (fossil fuels)*	• *Climate change*			• *Noise*	• *Cost of transportation*
Use	*Use*							• *The population riding bikes is expected to rise from 10% to 15% in the next five years.* • *Consumers are keeping their bikes longer, investing instead in repairs, new parts and accessories instead of buying new ones.*	• *The LOHAS (Lifestyle of Health and Sustainability) market segment is growing rapidly, over 15% per year. The LOHAS segment is willing to pay a 20% premmium bikes.*	• *Low price due to competition* • *LOHAS segment has a potential market size of 0.6-1.3m$.*
End of life	*No recycling*		• *No recycling*	• *Waste e.g. tires, plastic*		• *Waste dumping* • *Lead accumulation in soil and water leading to lead poisoning*			• *Generation of waste lead poisoning*	• *Valuable metals are disposed off* • *Emerging of second hand market competition*

ST.6 Update the sustainability hotspots

As pointed out in the Eco-innovation Manual, an important part of understanding the operational performance of the company is to gather data about the life cycle sustainability impacts of the products the company offers and update the sustainability hotspots that you identified during the *PREPARE* phase. These data should be captured by updating the *Life-cycle-Thinking* template already completed in the *PREPARE* phase for the value chain, thus the updated *Life-cycle Thinking* template just presented.

With updated information about the sustainability impacts, you can now also update the sustainability hotspots. The following table illustrates the sustainability hotspots identified for the BikeBizz Co. along with some of the key stakeholders and ideas for how they could help to address these hotspots.

Table 7: Identified sustainability hotspots and how stakeholders could help

Sustainability hotspot	**Stakeholder and how they could help**
growing demand for affordable, high quality forms of transportation (e.g. bikes) in local market	• customer- willingness to pay a higher price
competition from low-cost international companies putting pressure on market share	• manufacturer- new production methods for higher metal utilization and less metal waste for higher utilization rates and better competition • manufacturer- diversification • manufacturer- using high quality and close production site as selling point • investors/local community- invest in local company to ensure good competition on the global market
increasing costs of energy and process agents in the metal fabrication processes	• manufacturer- more sustainable manufacturing processes
growing demand for sustainable products and services in the bicycle production	• customer- willingness to pay higher prices • manufacturer- use the demand for high quality products as selling point: advertise sustainability and local production
increased interest of the long-term investors in companies involved in sustainable production	• recycling company- recycling strategies to decrease the amount of metals dumped after use

ST.6 Update the sustainability hotspots

Eco—i Metals

Sustainability hotspot	**Stakeholder and how they could help**
waste generation along the bicycle life cycle (raw materials extraction and production, production, end-of-life bicycles)	• suppliers- more sustainable extraction methods; less use of natural area • manufacturers- more sustainable use of raw materials, paints, hazardous substances • recycling company/customer- take back actions for high metal return for recycling instead of dumping • recycling company – recycling strategies to decrease the amount of metals dumped after use
health and safety issues along the life cycle of the product	• extraction site managers- allow for better health insurances • manufacturer- higher standards of work place safety and health issues
lack of recycling infrastructure for different waste streams (metals, hazardous waste)	• manufacturer/recycling company: new recycling methods; new metal formulations for better separation and recycling; more sustainable use of hazardous substances; processes for internal reuse of hazardous substances