

1.3. SCREENING ANALYSIS OF THE INPUT AND OUTPUT OF THE PRODUCT LIFE CYCLE with links to aspects within 1.4

		Design stage	Pre-manufacturing	Manufacturing	Distribution	Use	End-of-life
INPUT	Energy	---	-	---	-	X	++
	Materials	---	-	---	-	-	++
	Water	---	-	---	-	X	++
OUTPUT	Emissions to air	-	-	-	-	X	++
	Emissions to water	--	-	--	-	X	++
	Waste	---	-	---	-	-	++
	Impact on health and safety - direct risks for people and their health and safety	-	-	-	-	-	++
	Social impacts: community and its social capital, social exclusion, poverty, migration unemployment, etc.	--	-	-	-	-	++

- Evaluate inputs (use of natural resources) and outputs (pollution) within specific phases of life cycle:

No impact	x	
High negative impact	---	High positive impact +++
Medium negative impact	--	Medium positive impact ++
Low negative impact	-	Low positive impact +

Evaluation is only indicative, core criteria is an impact on quality of life

- For identification of some inputs and outputs can be used input - output analysis at the level of production process (TOP 20 within step 1.2)

GOAL OF THIS ANALYSIS IS NOT TO FILL IN ALL CELLS BUT TO INDICATE AREAS WITH POSSIBLE POTENTIAL FOR IMPROVEMENT WHICH SHOULD BE FURTHER ANALYSED IN MORE DETAIL

ASSUMPTIONS:

- The pre-manufacturing phase (cows breeding, milk production etc...) occurs in a local farm which already applies the Best Available Techniques, organic production and is characterized by high environmental performances;
- The distribution is outsourced. Truck class EURO 4 are used for milk distribution.
- The packaging is 100% recyclable. No information are given to the consumers about the qualities of the milk.

RESULTS:

The main areas of potential for improvement are highlighted in yellow in the table:

Explanations (this is for internal use only, not to be given to the participants):

- 1) Desing phase: since energy, water and milk consumptions are high, they could be reduced by interventions on the design of the production processess (layout of the plants, management of the productions processes). Interventions could be made also on auxiliary materials (cleaning agents, lubricants, etc..) and the packaging materials. The same considerations concern emissions to water (waste water) and the wastes produced. Interventions could be made also on health and safety by giving the consumer specific information on health related milk qualities. Finally at social level, interventions could be made in the distribution and use phase by for example making partnerships with schools and „Soup Kitchen“, bringing benefits to the lcoal community.
- 2) Pre-manufacturing: low negative impacts of the farm producing the milk.
- 3) Manufacturing: high impacts on consumptions of energy, material (especially raw milk and use of hazardous materials) and water. High production of wastes (in particular milk losses).
- 4) Distribution: low impacts, distribution already optimized.
- 5) Use: if the packaging is not suitable, some milk could fall out or be not well preserved and there could be a negative impact on material consumptions. The waste is the milk which is lost caused by a wrong packaging. We have low negative impacts on social aspects because the dairy is not doing at the moment actions with the local community and on health and safety because no information are given to the consumer about the use of the milk.
- 6) End of life: packaging 100% recycled.

The areas to be further analysed in 1.4 are in order of priority:

- 1) Energy, material (raw materials, auxiliary materials and packaging), water and waste in design stage and manufacturing;
- 2) Water emissions in design stage and manufacturing;
- 3) Social aspects in design stage.