SUPPLY CHAIN IN WINE SECTOR

The supply chain of wine has always been considered to be one of the most complex (GS1 AISBL, 2009). Both the Working Group of GS1 and Petti et al. (2006) have identified and described a more or less similar supply chain for wine, which comprises the following stages:

a) grape production,

b) wine production,

c) packaging,

d) distribution.

Additionally, there could be added stages after the distribution in order for the full life cycle to be considered, such as

e) consumer phase and

f) end-of-life.

The first stage (grape production) consists of the agricultural operations, such as pruning, tillage pest control activities, harvest etc. Furthermore, transport that occurs within the field operations for workers and products is taken into account in this phase. Finally, equipment maintenance is an issue, which ought not to be forgotten.

The second stage (wine production) includes operations such as stemming and crushing, the fermentation and storage. Here, the grape is transformed into wine, by first becoming "must" and then – through the fermentation process – wine. Processes included in the "clarification" of wine comprising "racking", "fining", "filtration", and "refrigeration" are also an important part of this stage in order to 'purify' the output, i.e. wine. Finally, storage takes place in this phase where wine is stored in order to be aged.

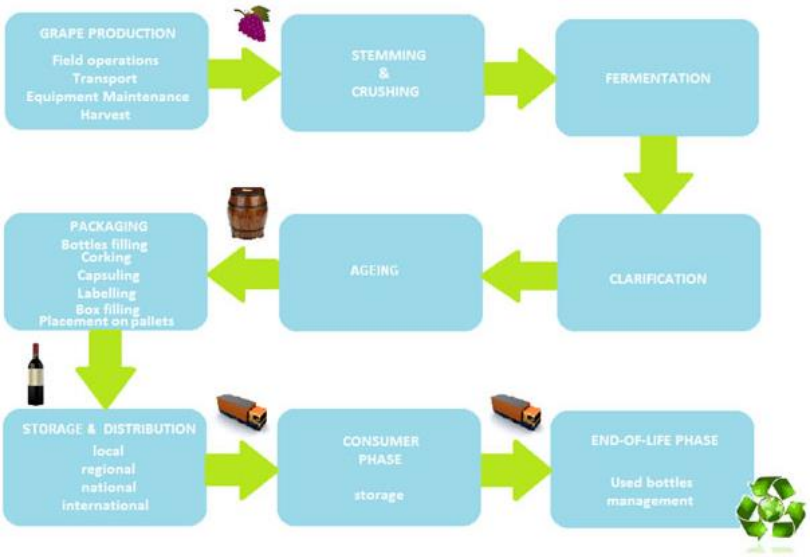
In the third stage (packaging) processes, such as bottle filling, corking, capsuling, labelling, box filling and placement on pallets, can be taken into consideration.

The fourth phase (distribution) is a mainly transport-related one and can be referred to at a local, regional, national or international level, depending on the strategy and production capacity of the firm.

The consumer phase, moreover, cannot be considered as an insignificant stage in the wine's life cycle. This is due to the fact that storage takes place here and may have a rather noteworthy impact (depending on the needs to keep the wine refrigerated or not) when assessing the overall environmental impact of wine.

The last stage (end of life) includes the procedures for treatment of the bottles and waste of packaging (cardboard boxes, corks etc.). This phase can also have great impacts on the environment depending on the chosen method of waste management (for example, reuse, recycling, landfilling, etc).

Finally, it has to be highlighted that transport is a process, which can occur also elsewhere in the life cycle (other than where already mentioned), either between any two subsequent life-cycle stages or within a given stage, depending on the site-specific means of processing and the level of supply-chain integration.



References

GS1 AISBL. 2009. Wine Supply Chain Traceability [Online]. Brussels, Belgium. Available: www.gs1.org/docs/traceability/GS1_wine_traceability.pdf [Accessed 20 May 2011].

Petti, L., Raggi, A., De Camillis, C., Matteucci, P., Sàra, B. & Pagliuca, G. 2006. Life Cycle Approach in an Organic Wine-making firm: An Italian case-study. In: Proceedings of 5th Australian Conference on LCA, 22-24 November 2006 Melbourne, Australia.