

Deliverable A1.2

Case Study Report

Acqua Minerale San Benedetto S.p.A.



1. Introduction

As a part of the preliminary research conducted for the LIFE EFFIGE project, Sant'Anna School and ENEA collected a list of good practices on life cycle assessment (LCA) implementation in our target industries, namely agrifood, catering services, foundry, and furniture. This list, or 'observatory' is made of fifty companies that had conducted an LCA for at least one of their products and used it thereafter to change either their products, their processes, or strategy. The fifty companies were then ordered according to the extent of the changes implemented. As a result, five companies were selected as they introduced substantial changes at the organizational level after conducting LCAs.

Acque Minerali San Benedetto S.p.A. (San Benedetto hereafter) was selected for their engagement in sustainability and, in particular, the use they do of LCA as a management tool to support efficiency indicators, eco-design and continuous improvement. The main objective is to obtain a more efficient production, but also to disseminate a culture of recovery and waste reduction towards the consumers and the commercial partners (interview to Enrico Zoppas, www.foodweb.it).

They invest constantly in R&D in a way that has allowed the achievement of very good performances of reduction of CO₂ emission and of virgin material for packaging. Moreover they adopted initiatives for the compensation of CO₂ residual.

In 2014 San Benedetto obtained the validation of EPD – Environmental Product Declaration for the product lines 'ecofriendly' and 'ecogreen'. In 2016 they published an External Communication report- "Analisi della Carbon Footprint della linea acqua San Benedetto", in agreement with standard ISO 14040 e ISO 14044. In November 2017 they launched the project "Nasce la Foresta San Benedetto", a 'green lung' of 8 hectares and 6,000 trees built in the Municipality of Scorzè (Venice) in collaboration with Treedom, an initiative that highlights the commitment of the company towards the protection of the territory and the environment.

We collected information on San Benedetto by means of desk and field research. Desk research started prior to contacting the company by having access to their website, the Orbis database, and other online websites resulted from an online search. We then contacted the company to set up the interviews and, in that occasion, we also asked for additional material relevant to the scope of our case study. Two interviewers were then in charge of conducting semi-structured interviews with key managerial figures relevant for our purposes. The protocols for these are available on request. Based on our interviews, we asked for additional documents that either could not be found online or emerged from the interviews. Table 1 displays the timeline of our research procedure, while more information on the structure of our information collection can be found in our 'Case Study Framework'.

March 2018	Desk Research	Online	San Benedetto website Other websites for the economic profile
April 2018	Contacts		Email exchange, one meeting at EFFIGE partner's premises and calls
September 2018	Desk Research	Off-line	Carbon footprint report
November 2018	Field Research	Interviews	- Environment Manager and LCA team Manager, 60 min; - Research & Development Manager 40 min - Marketing manager, 40 min; - Top Management 30 min
	Desk Research	Additional Documents	Organizational structure

Table 1. San Benedetto Information Collection Timeline

One researcher was tasked with the compilation of a file with key information on the company, before visiting the company to conduct interviews. This file was shared between the two interviewers and other members of Sant'Anna School involved in the project. This had two fundamental aims: one to guarantee that the two interviewers shared the same notions regarding the company, and also to check whether information they deemed necessary was already available or to be requested in situ. Table 2 reports key information on San Benedetto.

Name of the organization and location of the headquarters	Acqua Minerale San Benedetto, Scorsè (VE)
Foundation	1956
Type of company	Italian Multinational corporation
Number of employees (last available year)	1900 all over the world
Consolidated turnover (last available year)	€ 713,000.000 (2016)
Main markets	PACKED MINERAL WATER
Brands	SAN BENEDETTO; ACQUA DI NEPI S.P.A.; GRAN GUIZZA; ALPE GUIZZA S.P.A.; VIGGIANELLO FONTE DEL POLLINO S.P.A.; FONTE CUTOLO RIONERO IN VULTURE
Relevant brand/product for this report	San Benedetto mineral water

Table 2. San Benedetto key information

1.1 Case Study Takeaways

The main takeaways from the San Benedetto case involve the role played by the key managerial figures inside the organization and their commitment towards sustainability and LCA. Sustainability is at the core of the business and has led to higher production efficiency and increase of competitiveness. LCA is especially a management tool, even if they use it also to support environmental communication (EPD, carbon footprint).

In San Benedetto the LCA has led to a global re-organization of the company: environmental challenges and life cycle approach have redesigned a new way of working and cooperating between

departments. The LCA has increased all employees awareness about sustainability and its advantages: it is perceived as a strategic driver to innovate all areas of the company not only in terms of environmental impacts, but also from the economic, organizational and technological point of view because it supports a transformation of the way of thinking about all activities and roles related to the product. LCA has strengthened cooperation between all company's structures, increasing efficiency and quality under all the point of views, not only the environmental one.

In other words, the initial goals of LCA activities, which were aimed at the eco-green line products, as a separate product brand within the company, have evolved in a real philosophy where LCA logic, once applied to a more systemic and wider level, has led to results much broader than the "product scale" initially expected.

2. Introduction to the selected Company

In 1956 the first production plant was established in Scorzè (Venice), where the waters of the San Benedetto and Guizza springs began to be bottled. In 1959 it became a joint-stock company and the Zoppas family acquired the majority of the company's shares, and then took over the entire shareholding in the late 1960s.

In 1984 they signed an agreement with Cadbury Schweppes International, starting to produce and distribute the entire range of Schweppes products in Italy and, in 1988, they signed a franchise agreement with PepsiCo, to produce and market in Italy the range of Pepsi and Seven Up branded products. In 1995 a new factory was established in Popoli (Pescara) where Guizza Fonte Valle Reale mineral water is bottled. Through a collaboration agreement between San Benedetto and Danone, Polska Woda is established in Poland and Magyarviz Kft in Hungary. In 2002 an agreement for the production and packaging of Coca Cola products for the European market was signed.

In 2010 San Benedetto acquired from Danone the remaining 50% of the two companies active in the production and marketing of mineral waters and soft drinks in Poland and Hungary, becoming the sole shareholder. In 2014 they build in Viggianello (PZ) a new plant for the bottling of San Benedetto mineral water from the Pollino Park.

After the development of the "one way packaging" in glass at the end of the 70s, the company is the first in the 80s in Italy to launch containers in PET of various sizes and arrives to self-produce all the containers. In 1986 they were the first company in Italy to produce a high performance aseptic bottling plant for non-carbonated drinks and in 1998 they patented the first push & pull cap.

In 2009 innovation and environmental values are combined in the program agreement with the Ministry of the Environment, which continues in 2016 with the signing of an agreement for sustainability.

In 2012 the Ecogreen project was launched, with the development of bottles made with regenerated plastic and with 100% of CO2 emissions compensated.

In 2016, a 13.2 MW trigeneration plant is set up which allows, by optimizing consumption, the reduction of CO2 emissions by approximately 17 thousand tons a year.

"Risorse per la Vita" is the company mission which is expressed in "Learning from nature to create well-being". It is the guiding principle that has always been at the base of the continuous growth of San Benedetto, which traces its path also for its future development. It is a commitment born to combine quality, safety, innovative ability with the seriousness of a market leader and with the effectiveness of a large company. This mission implies a precise assumption of responsibility of the company, a moral commitment that involves all employees and supports its development strategies.

3. Environmental Focus of the selected organization

The mission of San Benedetto has always been oriented towards technological innovation together with environmental protection, as confirmed by some environmental product innovations such as the water bottle redesign for the material reduction, and the recycled PET use.

The environmental issue is strongly felt in the words of the top management:

"We manage water wells of thousands of years of life, our mission is to protect them and preserve them in order to maintain the quality of the resource as well as nature, and at the same time make it accessible to people without damaging it".

For San Benedetto sustainability doesn't mean just the protection of the resource and the ecosystem in which it is located, but it is also extended to all activities that make water available to citizens and that is the core business of the company: the bottling.

In the last 10 years, San Benedetto has made major investments with a view to continuous environmental improvement, which has led the company to undertake paths of sustainability considering all the phases related to their activity.

4. From a Life Cycle Assessment to a Life Cycle Logic

The LCA project in San Benedetto is born by President's willingness to identify scientific based tools to support communication and product development according to the company's mission focused on innovation and environmental sustainability. Today the project has become a corporate project that transversely affects all areas and internal structures.

The "LCA into company", as they call it, has started in 2008, when the President commissioned the environmental manager to coordinated the first LCA study thanks to the opportunity to participate to a project of carbon footprint assessment promoted by the Italian Ministry of the Environment (MATTM).

The project led to understand the potentials of the life cycle approach and, at the same time, the limits arising from the uncertainty of the results due to the data quality and/or the variability of the assessment methods.

The desire to further exploit the tool, after the one year project, has led to the involvement of the University of Padua with the aim of better understanding how to transform the LCA from a “case study” tool to a tool of daily utility within the company.

As the environment manager told us:

“After the first contact with the University of Padua, I immediately understood what the usefulness of the LCA for the company could be. The LCA project was therefore presented to the top management, who immediately supported the idea. A three year of doctoral research project was started, and today it has become the object of study and international appreciation. With this research project we have moved from a typical study of LCA of product to an LCA of organization that has foreseen a collection of primary data regarding all products and processes in San Benedetto. The collaboration with the University of Padua has let us meet a professional figure, the doctoral candidate, then employed in the company, who’s today leading the internal team entirely dedicated to the LCA”.

Following this experience, San Benedetto further invested in the LCA project with the regional project "Progetto Giovani", thanks to which 14 persons were introduced into all the 14 production plants (both Italian and international) in order to extend the primary data collection to all San Benedetto's production sites. Also in this case, at the end of this experience, many people were employed into the company to establish the current company team entirely dedicated to the LCA.

With the inclusion of professional resources in the company and the creation of an internal structure dedicated to the LCA, the next phase has envisaged the transfer of the methodology within the corporate culture. Today the LCA is the link between the various structures in San Benedetto such as research and development (R&D), marketing, supply chain and operations division.

As the environmental manager confirms

"We have grafted the people who deal with LCA next to the heart of production and in technical departments to spread the methodology that is now enriching the technicians, and vice versa: it is a mutual contamination".

Also the LCA team manager remarks this point:

"I did different training in the company, for example for the resources involved within the “Progetto Giovani”. I have trained them on the LCA, but also within the company based on the specific needs and on how we collect and use the data [...]. We are today a well-placed team and distributed in different structures of the company in order to strengthen the interaction and the penetration of the LCA at several levels, as well as allowing the adaptation and applicability of the tool consistently with the specific problems of each unit and harmonized with the existing operational tools [...] we work with very short production times and it is important to be in direct and continuous contact with the different departments ”.

All this has also led to investments for the development and improvement of IT tools for data management:

"To map the database, referred to a large number of items, required a large investment, both in terms of resources and tools, which need to be built ad hoc and capable of managing and automating the database",

confirms the environment manager.

San Benedetto has built today an LCA network within the company thank to which all areas are deeply understanding how to use the LCA approach to improve their daily activities.

At the marketing level, the LCA has given the opportunity to undertake communication campaigns based on scientifically sound information without renouncing innovation and creativity. As the Marketing Manager told us:

"we have always been a highly innovative company and extremely attentive to environmental issues. Our products still had environmental performances to communicate [...] but what we didn't want to do was to use slogans or sensational assertions: we didn't want to do "green washing [...] The LCA has allowed us to communicate performance and results through the support of rigorous data. This is very important for us, not only from a personal point of view, but also because we have always been a company with a very high reputation: we could not afford to introduce ourselves to consumers by providing non-objective and verifiable information".

As previously emphasized, LCA in the company has led to a real change of philosophy, a new operational and organizational approach at all levels. The contribution of this route within a key sector, such as the R&D, is very relevant.

As witnessed by the R&D manager

" Opening up to new approaches in our field is essential, so the LCA from the beginning appeared to me as an absolutely interesting possibility. We have always been a very innovative and technologically advanced company, but the LCA has given us the opportunity to further expand our horizons, by including in the design phase some aspects that we initially did not consider [...] We made a big change [...] and today the projects start involving all the units from the beginning. The collective briefings give us the possibility to consider parameters and needs that the product or process must satisfy in all aspects. This has led to very high quality innovation".

Also at the supply chain level, the LCA has led to significant changes.

"If before the purchase of machinery was done only on the basis of production capacity parameters, today we are also requesting environmental performance. At the beginning the suppliers were not prepared for this type of request but, as time goes by, they understood the objectives and approach. We have come to design and customize the machinery according to our needs, such as machinery with high energy efficiency, with a maintenance plan and with a reduced consumption of auxiliary materials, such as chemicals",

explains R&D Manager, who concludes:

" we are enthusiastic, the LCA study allows us to see the result of the innovations we make to an even wider scale, such as the reduction of the weight of the bottles, which sees its

positive effects not only the terms of less quantity of PET purchased, but also in environmental terms considering the entire life cycle".

San Benedetto has recently launched a further process of transferring the LCA within the supply chain, extending it also to the external phases in order to identify possible improvements of the operation processes, such as, for example, cargo handling , storage, logistics and distribution.

To conclude, as pointed out by the managers of the various areas, the intervention of the top management confirms the strategic importance that the company has always wanted to give to the LCA, even throughout important investments. As highlighted, the LCA has consolidated and supported the fulfilment of the company's mission, which has always been oriented towards technological innovation together with environmental protection. Moreover it has strengthened the cooperation between all Company's resources by creating a common goal and mission.