SOCIAL SUSTAINABILITY OF THE ILVA TARANTO STEELMAKING PLANT

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# ILVA S.P.A. – ENVIRONMENT DEPARTMENT

Abstract

The social impact of the steel industry has been at the centre of the discussion on sustainable development since the Brundtland Commission’s definition (1987): “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. The European steel industry is committed to sustainable development, according to the conviction that economic growth is closely related to social progress and the environmental quality.

The purpose of the present papers is to provide, according to the research perspectives in this field, the industrial strategies of ILVA-RIVAGROUP, the leader steelmaker in Italy and one of the most important steel producer in the world.

Within the panorama of worldwide steel industry, the ILVA-RIVA GROUP is committed to sustainable development, through the conviction that:

- the profit cannot be released by the environmental, social and economic problem solving;
- the industrial activities must have positive impacts on social development.

The ILVA plant in Taranto is one of the main steel plant in Europe, which produces more than 10 million tonnes of steel per year. The present paper shows the results of a recent research, which indicates that the social and economic impact of the Taranto ILVA plant in its local environment is positive. Moreover, the company policy is committed towards the awareness that responsibility to people are becoming essential for successful business. On this subject the trust of the workers towards the firm has increased for the improvement in the performance in all the three aspects of an actual sustainable development, i.e. economic, environmental and social aspect.

In fact, together with remarkable investments in environmental issues, new steelmaking technologies, new steels and processes development, the ILVA-RIVAGROUP is committed to improvement: employment and training of young people; health and safety of workers; competence and training of employees; motivation of employees and the workers rights protection.

1. Introduction

The key concept of sustainable development is contained in “Our Common Future”(1987), known as the Brundtland’s report, in which is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [1].

On this subject a milestone is the Agenda 21 drawn up at the Rio de Janeiro Earth Summit (1992) [2] where had been identified three aspects of sustainable development: People, Planet, Profit. They represent the goals for the international community, which is now committed to attain the objectives relating to the environment (Planet), for instance by reducing greenhouse-gases emissions, to world population development (People), to economic development and to reduce contrast between industrial and developing countries (Profit).
The Earth Summit in Johannesburg (2002) has also emphasized the relation between economic growth, social development and environment protection [3]. European Union, in accordance with the goals of the European Council meeting in Lisbon in March 2000 (“to become the most competitive and dynamic knowledge-based economy in the world, capable of sustained economic growth with more and better jobs and greater social cohesion”), is committed to integrate the economic, social and environmental issues in order to achieve the sustainable development [4]. The European industry plays a key role in the economic development. Competitiveness and productivity of companies is close related to research and technological development, but economic growth would be impossible without social inclusion and environment protection. Actually sustainable development has not become an important field of research just in the academic and social field, but this concept concerns the whole policy of companies as a new model to conduct business.

In the last decade, beside national and European laws, governments are committed to encourage voluntary initiatives and promote Corporate Social Responsibility (CSR). CRS concerns policies, practices and programmes integrated into business operations. This is due to several reasons such as stakeholders’ pressure, customers’ requirements and survival in a competitive market. In particular companies, in order to contribute to a sustainable development, integrate in their management system other issues, such as quality, environment, occupational health and safety and social responsibility [5]. Manufacturing industry, heavy involved in resources consumption and environmental damage, particularly in the last 20 years has improved its performance to respond to principles of sustainable development [6] [7].

2. The steel industry and the sustainable development

Steel is one of the world’s most recyclable and readily recycled materials and the steel industry is the only industry that has a production system based totally on recycling. Actually in the electric furnace the main material is made by scrap iron. Concerning the raw material, scrap use preserves natural resources, therefore it is possible to predict that scrap use for steel production will still increase. Today in the world raw materials consist of scrap, which produce 34% of steel produced in the world, compared to 66% produced through the integrated cycle.

The by-products reuse is a consolidate practice in the iron and steel making, in particular for instance offgases are used for electricity production and slags in the cement industry. This reuse allows to save raw materials and energy consumption, to reduce emissions and to improve processes efficiency.

The history of steel industry has accompanied the economic and social development of mankind because steel is one of the most important materials upon which this historical evolution is based. Actually steel is a very versatile material which contains a wide range of products with different characteristics, which can be used for an enormous number of applications. Steel is a basic material for our society and it is ubiquitous in applications that directly affect the quality of our lives. In spite some “image” problems related to the ecological aspects, particularly the strong environmental impact of its production cycles, steel is still seen as a fundamental material for our society, considered highly secure, versatile, safe, recyclable, durable and with added value.

2.1. European Steel Industry and sustainability

Traditionally the European steel industry is committed to sustainable development with its performances improvement, nevertheless maintaining its technological competitiveness. Actually it depends strongly on its ability of renewal, through RTD programmes supported by
the European Commission and funded by the industry and the Research Fund for Coal and Steel.

Indeed over the past 25 years European steelmakers have been involved in continuous improvement of its performances through investment in new processes, new plant and new technologies to reduce energy and raw material consumption, to make highly efficient processes, to reduce CO₂ emissions.

By analysing the events concerning the steel industry in the 20th century, in particular from World War II, it is clear that each period has been characterised by keywords, related to the development of the steel industry and to the particular historic-economical conditions. The following keywords have been frequently used: “mass production” until the 1970s, “quality” from 1970s to the 1980s, “cost reduction” from the 1980s to the 1990s, “customer satisfaction” in the 1990s and the keyword of the third millennium is “eco-efficiency”, close related to the sustainable growth [8].

One of the main topics is the improvement of environmental performances connected to steel production. The iron and steel industry produces high quantities of CO₂ per ton of steel (500 kg of CO₂/ton of steel by electric furnaces, and from 1,700 to 2,000 kg CO₂/ton of steel by the integrated cycle). However the iron and steel industry has expressed, after World War II, a stronger tendency to adopt the concept of sustainability. In fact, in the last decades, the energy consumption and CO₂ emissions produced during steel production has been halved, from 4,000 kg to less than 2,000 kg per ton of steel. However, the analysis of the most recent data available on this subject shows that both the energy consumption and the emissions of CO₂ are established on constant levels[9].

2.2 Social sustainability goals of European Steel Industry nowadays

In spite of dramatic improvement in its performances the steel industry will have to face new challenges in the next decades.

Steel is a basic material for our society and, in a period of technical-economic uncertainty, it is still contributing to our society well-being, in accordance to the aim of sustainable development which concerns the improvement of the quality of life. On this subject European Steel Industry [10] is facing the following challenges:

• to conduct new business in accordance to customers requests and stakeholders dialogue;
• to associate business with social responsibility;
• to improve competitiveness through investments to production costs reduction;
• to improve the processes and them optimization to save energy and to reduce emissions;
• to develop new products in order to obtain better quality, energy efficiency and economy in material;
• to take care of employees health and safety;
• to improve workplace conditions;
• to use effectiveness skills and experiences of “human resources”;
• to have a responsibility to the people as regards occupational safety and education and training of workers.

3. The ILVA Taranto plant: emblematic case of ILVA-RIVA GROUP sustainable policy

In the worldwide steel industry the ILVA-RIVA GROUP is among the leader firms. It possesses 39 production and processing plants, in Italy, Germany, France, Belgium, Spain, Greece, Tunisia and Canada. In Italy the group owns 21 plants, where most (62,2%) of the steel is manufactured and 67% of the turnover is achieved. In 2003 the ILVA-RIVA GROUP produced 15,716 million tons of raw steel.
The ILVA Taranto plant is one of the main steel plants in Europe, which produces further 10 million tons of steel per year. It was built at the beginning of the 60ies by the Italian State as 4th steel production site in Italy.

When the first blast furnaces started in 1964 the steel production capacity of Taranto plant amounted to 3 million tons. Then increased to 4.5 million tons in 1970 to reach, in 1975, the current configuration of 5 blast furnaces with an installed capacity of 11.5 million tons of steel per year.

In the present work, the social and economic impact of ILVA plant of Taranto in its local environment has been investigated. In order to support data from the social balance of the plant, a social investigation concerning opinions of workers representative sample has been made [11].

The ILVA Taranto plant is on of the main Italian industrial plants employing nowadays more than 12,500 people. In the past employment was reached in 1980 a total workforce of about 22,000 people.

In order to maintain competitiveness in the market since then a workforce policy reduction has been implemented. The number of the total workforce has begun to stabilize already since 1992 on the figure of 12/13,000 people. From 1995, the year of the privatisation of ILVA plant, the RIVA GROUP continued this policy.

Since July 1997, a new and completely unprecedented factor commenced to deeply influence the Italian industry, in particular the steel and railways sector. Actually the Italian Parliament approved two laws (no. 257 of 1992 and no. 271 of 1993) allowing the anticipated retirement of workers exposed to the asbestos until the end of 1992. From then to the end of 2003, the enforcement of such law involved the retirement of about 7400 people. Consequently an extensive generational turnover deeply influenced the policies and in general the Company culture. This phenomenon in ILVA plant of Taranto implied the necessity to recruit within a limited period of time a large number of workers to be utilised in various production areas. In the Table 1 are summarized the main figures relevant to the number of people engaged by ILVA Taranto plant in the last 3 years:

<table>
<thead>
<tr>
<th>Year</th>
<th>Traineeship Contracts</th>
<th>Other Contracts</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>2,096</td>
<td>947</td>
<td>3,043</td>
</tr>
<tr>
<td>2002</td>
<td>1,394</td>
<td>1,906</td>
<td>3,300</td>
</tr>
<tr>
<td>2003</td>
<td>1,553</td>
<td>306</td>
<td>1,859</td>
</tr>
</tbody>
</table>


Data of our research shows that the economic and social impact of ILVA plant of Taranto to local environment:

1. The firm has contributed the overcoming of the young people unemployment. Actually around 50% of workers are less than 30 years old (Fig. 1).
2. The young people unemployment in Puglia (the southern Italy’s region where is Taranto) from 1995 to 2002 has reduced of 7.5% compared to other nearby regions such as Basilicata (3.5%) and Calabria (0.6%).
3. One third of jobs of Taranto province has insured by the ILVA plant.
4. The majority of workers in the ILVA plant of Taranto (66%) live in the surrounding land (Fig. 2).
5. The majority of produced wealth reverts in the Taranto outskirts.

The main task of the ILVA-RIVA GROUP, after the large recruitment, was to dedicate a considerable amount of human resources and investments to elaborate a training strategy in order to assign the newly engaged workforce to vacant positions.

For this people it was necessary to foresee: the integration in the specific operative activity; the training activities

Due to the loss of experienced personnel major task of the Company in the last years was the consequent replacement and training with people just graduated.
Additionally, in order to respond to the most stringent demand of its international customers, particularly oil and gas Companies, the GROUP has dedicated a large amount of training man-hours to line-up Taranto plant to the highest HSE (Health, Safety and Environment) international standard.

Therefore the very large extent of training activities performed in 2003 can be summarized in the following goals:

- Maintenance of the production and quality levels
- Equipments efficiency
- Health and Safety in the working environment.

General figures on this subject are summarized in Table 2.

### General figures on training in Taranto during 2003

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Total man-hours of training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager</td>
<td>23</td>
<td>141</td>
</tr>
<tr>
<td>Employees</td>
<td>865</td>
<td>16,341</td>
</tr>
<tr>
<td>Intermed. Levels</td>
<td>535</td>
<td>2,598</td>
</tr>
<tr>
<td>Workers</td>
<td>22,321</td>
<td>256,695</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>23,744</strong></td>
<td><strong>275,775</strong></td>
</tr>
</tbody>
</table>

Tab. 2 – General figures on training in Taranto plant in 2003

The total man-hours of training were allocated to the main topics, according to the figure 3:

![TARANTO PLANT ACTIVITIES (man-hours training)](image)

**Total man-hours:** 275,775

Fig. 3 – Taranto plant training activities
The main highlights relevant to training activities performed in Taranto during 2003 are:

- A high participation level involving 9300 people, about 75% of the total workforce of the plant. An important contribution to this figure was given by the training activities performed in accordance with UNI EN ISO 14001 Standard.

- A new model for planning the training activities, with the aim to create a continuous “professional background” of well-defined groups, by means of a series of “base training groups” followed by lessons on different production activities of the mill, for instance:
  - Instrumentation (base course on equipment’s tuning);
  - Personnel management.

- The development of “competences” dedicated to all production phases, for instance:
  - Lessons on the system for the management of spare parts in the various warehouses of the plant;
  - Course on the mechanical line-up to improve the performances of plants and equipments.

- Restructuring and enlargement of the facilities of the Training Centre. New spaces were dedicated to the libraries, classrooms, and lab research rooms, with computer facilities. This effort was made in the event of a future increase of the training demand.

As a consequence (Fig. 4) in year 2003, the total number of training man-hours increased by 21% compared to year 2002, whilst the peak of man-hours training was reached in 2001 with 299,407 hours.

![Fig. 4 – State of training hours from 1997 to 2003 in Taranto plant](image)

The training activities for the specialized workers tripled the attendances compared to 2002 and the number of man-hours increased by 25%. Furthermore, the number of themes
touched by the courses was increased in order to respond to the new technical training demands (Fig. 5).

![Fig. 5 – Specialized courses](image)

The HSE activities were focused to the target of obtaining the Certification for the environment management according to UNI EN ISO 14001 Standard (Fig. 6) for the Taranto plant. According to the Italian Law in 2003, the following training activities were carried out:

- Training for the integration of personnel in the various shop activities;
- Training of specific working risks;
- Training for personnel assigned to operate handling and transportation means.

![Fig. 6 – HSE Courses](image)

From our data results that the Company during last years performed a large recruitment of workers in a short time. Besides figures show that a large amount of investments and resources was dedicated for workers improving skills and training.
This policy has contributed first of all to reduce young people unemployment and to increase
the wealth in the Taranto region, but also to improve the quality of working environment and
to adapt the workforce skills to rapid technological changes. Actually continuous training
programmes have contributed to improve the trust of workers towards the firm, which
ensures: stable job, safe working conditions, better health and safety conditions, rights
protection and a valuable professional growth through a strong enhancement of the workers’
knowledge and skills.

4. Conclusions
The steel industry plays a key role to move the world society towards a more sustainable
development. In the European panorama the ILVA-RIVA GROUP is committed to achieve a
better integration of sustainable development aspects. In particular, beside investments and
improvements towards environment and economic issues, the Company has spent a huge
amount of efforts and investments toward human resources and skills management, through:

1. a very effective training strategy following a rapid turnover in staff;
2. a large number of hours devoted to continuous training programmes.

On this subject, this paper shows that the Taranto plant is a good example of Company’s
social responsibility for workers and employees.

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