

Investment projects

Their role in the sustainable economic development and in the environmental impact

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Abstract

Characteristic of "sustainable development" is in the "recognition" of the environment as an element, outside of which cannot be thought of overall development of a society. In this article will be treated the rehabilitation project of salt production in Vlore which is the only activity of this type in Albania and the largest in the Balkans. The industry of salt Production in Vlore is part of one of the branches of industry that can contribute in an important way in the national production and in the improvement of the balance of imports-exports. This project is done for two reasons:

1. Technologies used in Albania are of a very old level
2. The current productivity is very low compared with the industrialized countries.

This investment project apart from the impact to a sustainable development for the area it also presents a series of other values such as:

- Saline can provide water surface which are important for the moderation of climate and air quality.
- In the period of their return to their previous conditions they can turn into Lagoons of great value;
- Saline serve as a tool for the regulation of flooding in the area in which they are located;

Key words: investment, sustainable development, rehabilitation, sea salt, ecosystem, environmental pollution

Introduction

After 20 years in democracy Albania has passed the phase of transition and is now in stable growth boundary. Albania is a country with great potential to attract investments which will increase the opportunities for its further development. Sustainable development has become an acceptable concept for policy development

and is a derivative of the definition: "Development that meets the needs of the present without jeopardizing the ability of future generations to cope with their needs."

The numerous activities in the production process of salt leave marks in the territory of development by creating a series of conditions with a risk for the balance of the ecosystems on this area, conservation of surface land and surface damage of the agricultural product. We should mention that for its own specific as a plant using solar energy and seawater both renewable natural resources, the environmental pollution that is caused is minimal.

1. The aim of the project in the national context

The production of salt industry in Vlore is part of one of the branches of industry that can contribute significantly to the gross national product. An important indicator, which affects the economic development of the country, is the trade deficit (balance export-import). Salt production industry by producing salt in small quantities, contributes negatively to this balance, because almost all currently salt is imported. Consequently rehabilitation will enable this branch of industry to contribute significantly to national production and reducing the country's trade deficit. The rehabilitation of salt production plant of Vlore is subject to summary process of environmental impact assessment since we deal with an existing plant with extremely backward technology, with the current high pollution in the environment and rehabilitation of salt production plant at Vlore will cut about 130 times the current pollution in the environment.

If we turn to statistics of the last 10-15 years, it is noted that industrial production fell significantly, so the products of heavy industry (metallic minerals over 20 times, 50 times coal, oil and natural gas respectively 3 and 50 here, metallurgy color over 100 times, chemical products 70 times), cement and construction materials over three times, 50 times the mechanical industry, light industry over 10 times, the food industry over 10 times, etc. But meanwhile, it should be noted that there are plenty of industrial and energy products such as steel and ferrochrome; electricity, production of bricks, tiles and lime, by-products of meat, milk, refreshing beverages, certain products and leather clothing, etc. , that although facing difficulties, have not occupied a small part of the market and have an important place in our economy, with the contribution to real GDP by about 15% (or USD 360 ML).

The Strategy of Development Industry Sector presupposes development of different branches of industry, while maintaining current forms of energy supply, which in general are expressed by the energetic intensities and by the contributions of power sources for each industrial sub-sectors as illustrated in figure 1 and 2.

2. Environmental Impact of Industrial Albanian Sector.

Production of fuel has been a major contribution to environmental pollution in the country. Solid pollution from coal and oil production when these industries worked at full capacity, accounted for over 1.5 Mton / year for 1989 and has been decreased approximately 0.2 Mton / year in 2009. However, the biggest problem is the oil spills and the remains of crude and refineries, in rivers, lakes and our oil-bearing areas. The second indicator is very important for the emission of CO₂ for produced GDP expressed in millions of dollars (figure 4). As also shown in Figure 4, this indicator has values about 8-14 times larger than the average of developed countries. This is because:

- **Technologies used in Albania are of a very old level and in this also contributes even the current salt plant of Vlore.**
- **Productivity of the Albanian society is very low compared to the industrialized countries, as illustrated in figure 3 and 4.**

The numerous activities in the production process of salt left traces in the territory of development by creating a series of conditions with a risk for the balance of the ecosystems on this area, conservation of land surface and surface damage of part of agricultural product. The increased awareness about the possibility of destroying the limited resources available on the planet, knowing from the quantity part the social costs associated with the problem makes us responsible in terms of risk analysis during the development of a new industry forced by the state environmental policy in this regard. The normative framework of this policy defines and sets, among the objectives for preservation, protection and improvement of the quality of the environment, the use of original sources and the protection of health with the motivation: who pollutes, pays.

Land and water are the most precious assets of humankind, but that can be easily destroyed. For this in our investment plan we have treated genuine strategies finalized for this purpose. In this context a lot of importance is given to the quality of salted water as the main indicator of excellent quality natural environment in general and to salt food product that they produce.

Current technology operates on the basis of the process of collecting brines with great pollution measured 25-27% composed of inert material to the latest decantain bathtubs. These materials are mainly clay, sandy waste, marine algae, waste and air environment, etc. The high percentage of waste comes from outdated technology, unqualified staff, and the lack of infrastructure. Brine processing processes are accompanied by large waste already salted making them usable in uncultivated ground with high corrosive and dangerous effects for productive terrain making them

uncultivated. Today, the main technique is that of collection of waste and their bury in the clay pits in order to remove the salts through the cycle of sweet water in the atmosphere and land. The main drawback is the occupation of large surfaces in the case of increased productivity of the enterprise as well as the long integration time of waste with the ground surface.

3. The data for the existing environment of the area where the plant of salt production will be rehabilitated

We must emphasize that the rehabilitation of salt production plant at Vlora is important for our country (currently this would be the only facility for this product so much demanded of the country) also it will affect significantly the improvement of the infrastructure of the former marshy area - which is proposed to be built. As a result of its construction all the surface waters will be disciplined since a complete drainage system and the respective watersheds channels will be built, both within and outside the plant these regulated waters (from the system of drainage) will be deposited in the sea.

The factors which determine the climate of the region are :

- » The geographical position of the area influenced by the proximity of the Adriatic and Ionian seas, which alleviate the extreme effects of the climate. Cyclone
- » The influence of cyclones and anti-cyclones which regulate the climate of the whole area.
- » Orografi and in particular the position of the chain of mountains and valleys (north / west - south / east).

As shown in Figure 5 and 6 we have a variation in temperature from 9 ° C to 25 ° C during all the months of the year with an annual average 17 ° C. The following are the minimum and maximum temperatures by months of the year in which the area of Vlora shows a favorable climate for industrial salt production.

In Figure 7 there are given the values of intensity of solar radiation to the area of Vlora for each month and the annual average for the period 1948-2008 based on the meteorological measurements of the station of Vlora.

From the world experiences in the electromagnetic field, results that the rehabilitation of salt production plant in Vlore does not create negative impacts on the environment, moreover this plant will be rehabilitated in an inhabited and intensive area on the development of industry.

4. Description of investments that will be made for rehabilitation of salt production plant in Vlora.

This project will be financed by ALB-SALE company with an investment of 1.8 million euro.

- Processes based on new technology increase the amount of net product with the idea of raising the amount of associated waste in relation to total product. **Solar steaming now as the main process of production will be seen as the form of the process with more negative impact on the ground.** Solutions exist in the neighboring experiences through the drainage of the washing process, a process that provides the bulk of the waste. Drainage consists of underground channels that extend from the washing plant to the salty water coast. The form of drainage is in deltaic form with at least five parallel shedding. Strong pumps push through the water pumping saline and waste making a uniform distribution. These waters flow into two deep tubs where occurs the treatment (decantain) of waste while salty water in the upper levels flows in free stream to the sea, now naturally crystallized.

- The amount of waste does not exceed 2-7% of pumping water as it is for the same index of components, but in very tolerable figures now the for risk they carry themselves. Plant cost is higher in terms of solar evaporation, but the positive effects in terms of care for the environment are excellent attaching here even the independence of output from atmospheric elements that define the parameters of productivity and quality.

- Cost of replacement of filters is comparable to the cost of water pumping of ionized waste

- For a distant perspective it will be aimed for the controlled evaporation method, which eliminates in almost zero the waste from the cleaning of salt.

- » In this evaporation the consumed energy exceeds the allowed parameters, but in terms of environment it would be a prototype of modern technology. The possibility of existing waste treatment buried for decantain will be viewed, in order to generate in a small size desalinated land or poor in collaboration with the specialists of fertile land treatment.

- » All will be supported by a special fund of the nature stemming from the budget of the enterprise to support the environmental policies of the Albanian state.

Under these conditions we think to realise 80-120 thousands tones salt per year, aiming to produce 140 thousand tones after the fourth year.

- The investment for the vehicle and the equipment goes up to 1.790.000 Euro, this is the first phase. "Alb SALE Sh.a will have 200 employees with an average salary from 150 euro today to 300 euro.
- Secondly it is supposed the creation of a laboratory for the control of the quality with the aim of its transformation into a research center for the evaluation of all the salt resources and the surface of its production. This will require specialists who have the necessary relations with the Institute of Scientific Research or the University to open the green light and make efficient the projects so far remained on paper.
- The therapeutic features are another direction of development thanks to the resources and to the presence of algae in the meme waters, which allows the creation of baths in the salty waters where you can fight rheumatism. Salty waters are used to stay from 27.5 to 30 ° 'Baum, where the concentration of bromine and iodine is higher. The construction of these requires an investment of around 600,000 euros.
- Mud through simple construction of facilities for heating up to 45 ° create comfortable environments for application, open to leather, giving positive curative effects and maximum relaxation by reducing physical pain. The construction of such a complex requires an investment of 7.000.000 euro.
- Finally, asking further reduction of the cost of salt production and what is most important, reducing the negative impact of pollution, residues for the lagoon environment, will be built a plant to absorb water directly out of the facility. Thus is given the possibility that through controlled evaporation to be resumed salt and water doing again used a micro-biological cleaning.

5. The factors that affect the production of salt through evaporation

Although a place may have a long coastline, this does not mean that every part of this can be used for the production of salt by evaporation. There are a number of factors to be taken into account before creating a solar salt facility. The effects of these factors must be studied for periods ranging from three months to several years. Any of these factors can become critical. However, for the solar salt works these to be good and economic all the factors must be at least favorable. These factors are:

- land and its topography
- market access
- soil conditions
- meteorological conditions
- Sea water / salt water and their salt
- vulnerability of the area's flooding

Ideally, the place must be flat or with some inclined clay blocks not suitable for agriculture, with high access of quantity of salty waters or salty underground, with the conditions for stopping the waves during periods of large waves, with little or no precipitation, with dry winds throughout the year, with a large rail or port. However, these ideal conditions are so rare.

6. Possible effects on the environment during the rehabilitation phase of salt production plant in Vlore.

An impact on the environment has the preparation of the square of salt production plant at Vlore, which is about 250 m to be on the main road. Consequently during the improvement of this very short distance the road we will have emission of dust in very small quantities in the atmosphere as a result of the various works to be made in the square of settling the machines. Emissions in the atmosphere will be present even during the asphaltting of this square of construction.

The site chosen is a former marshy area that is dry for many years, that is why the drainage is very necessary.

To realize the project during the rehabilitation phase, according to the case, will be required from 170 to 200 workers and specialists and from these 10-15% will be high specialists. This has a positive impact because it relates to the reduction of unemployment that currently is at 18-20% level in Vlora.

Saline except for their value in the field of trade, represent a series of other values for following environment as follows:

- They can provide surface water which is important for the moderation of climate and air quality.
- They provide a potential opportunity to create cleaning or management activities of natural wildlife.
- In the period of their return to the previous conditions they may return to Lagoons with big values.
- Saline serve as a means to regulate the flooding in the area in which they are.
- They also moderate air pollution.

Another value of them is that the saline may provide an important habitat for birds, especially those of water, and create opportunities to improve their habitats.

- In addition to others saline carry themselves and visual and attractive value for visitors.

- The energy required for steaming is solar energy that is not associated with cost.
- Salt, which is considered as a product entirely clear is not toxic and is not characterized by changes during transitional phases.

7. Advantages of the project for the rehabilitation of the salt production plant at Vlore for the economic development of the area.

The rehabilitation of the salt production plant in Vlore is a project that would enable security of supply in a sustainable with this import product reducing greatly the import for this product as well as making possible the reduction of the country's trade deficit . Some simple calculations show that our country currently imports about 35-40 million per year salt and the rehabilitation of this plant will enable the increase of production and reduction of imports.

Under the project plan we see a considerable number of people anticipated to participate in the process, which means increasing the levels of employment and welfare in the surrounding area. In the case of saline plant, we do not have a genuine investment, which would mean high levels of noise, solid waste, air quality deterioration, but we have the rehabilitation of an existing facility, which minimizes the appearance of the above phenomena.

The community has welcomed the rehabilitation of salt production plant in Vlore, because this project will enable not only supply their homes with high quality, but will create opportunities for business development and employment of members of the community.

We must emphasize that this project so important for our country will also affect significantly the improvement of the infrastructure of the marshy area, where is proposed to be built.

In all the world practice and literature saline appear to favor industries with clean and friendly environment both at the level of costs and for the impacts on the natural environment.

Conclusions:

- Sustainable economic development requires significant levels of investment in infrastructure, marketing, in human resources, management of natural areas, preserving historic sites and culture of life. The country can not be successful without a serious commitment for investment.

- Investment adversely affecting the environment and that are with short-term profits and in large volumes, should be avoided.
- Investment projects should bring benefits to communities or people living near the areas of natural and cultural interest, affecting the growth of their standard of living.
- To create a right cycle of sustainable development based on tourism the Government of Albania should protect and enhance, together with local governments, tour operators and NGOs, places, parks, cities and protected areas, central assets to its tourism sector.
- The project of rehabilitation of salt production has incalculable effects to the environment because a renovating source of energy is used such as solar energy for the production of salt and as raw material will be used the sea water after which after salt production will again be recycled .
- The project of rehabilitation of salt production in Vlora, which is the only event of its kind in Albania and the largest in the Balkans is part of one of the branches of industry that can contribute significantly to the gross national production and improve the balance of import-export.

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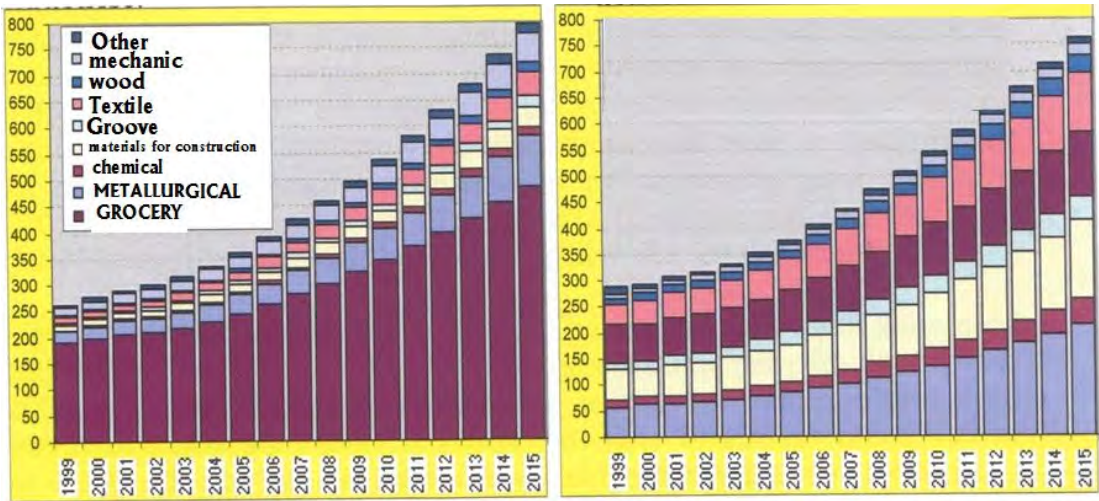


Figure 1: Prediction of the contribution of each industrial sub-sectors to GDP of industry (ML USD)

Figure 2: Prediction of energy needs for the industrial sector according to sub-sectors

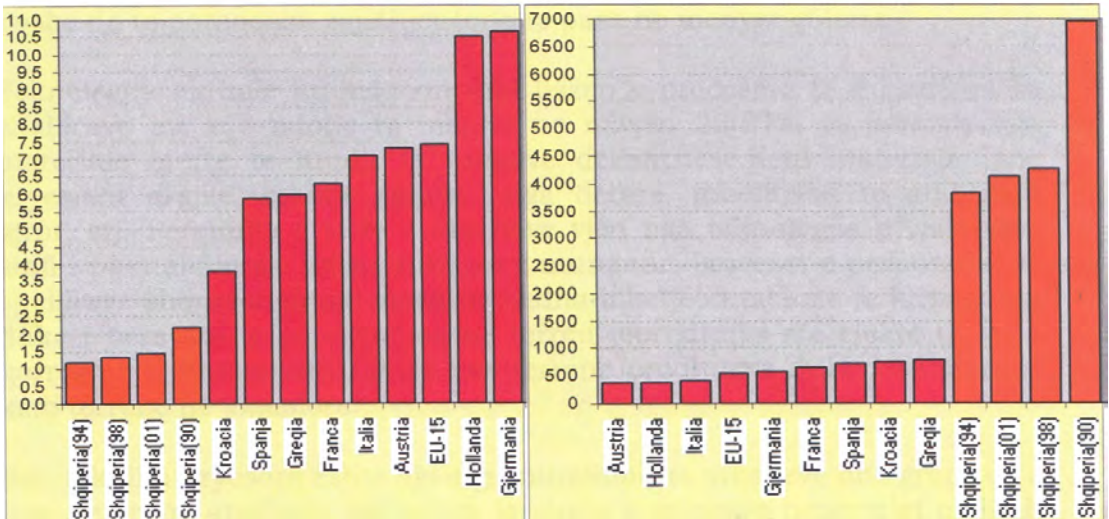


Figure 3-4: Emissions of CO2 from burning fuel in tonnes /residents for the year 2009

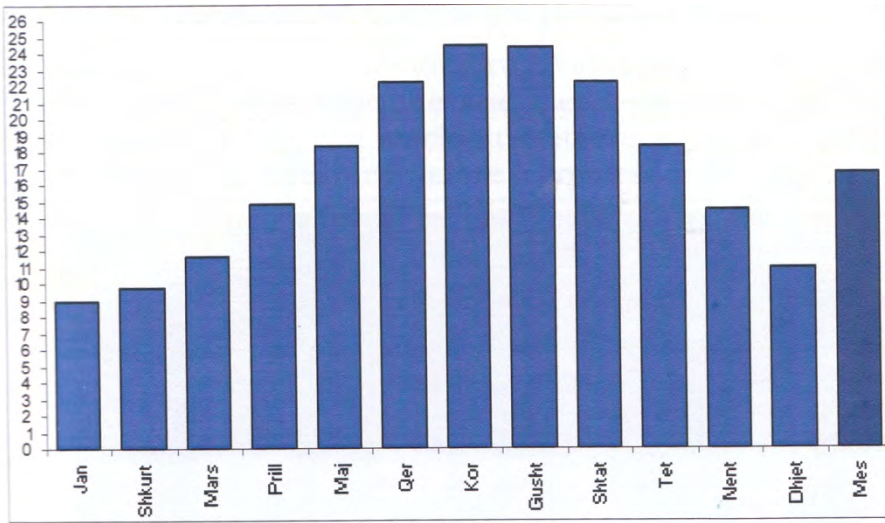


Figure 5: The average temperature of air in °C for the Vlorë area.

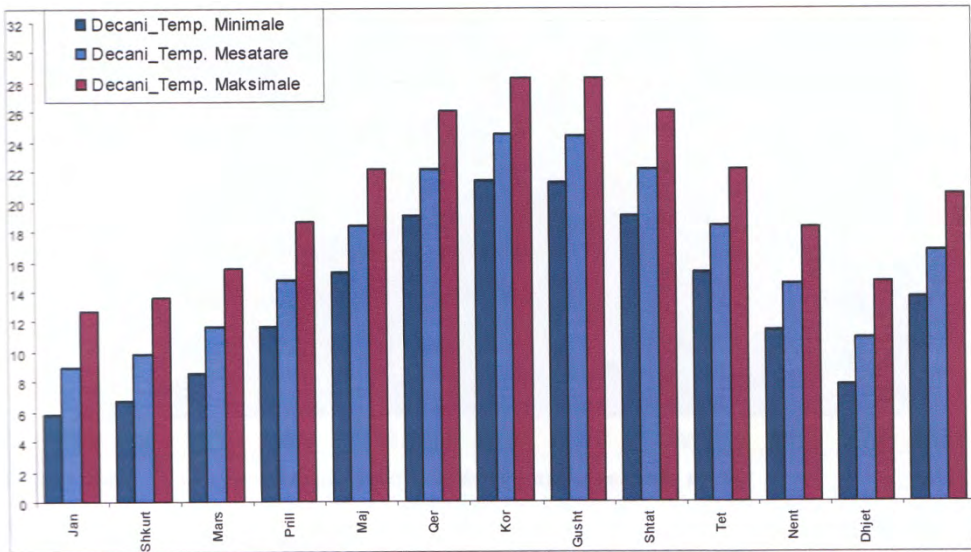


Figure 6: Monthly average temperature higher and lower together with the respective amplitude of Vlorë area.

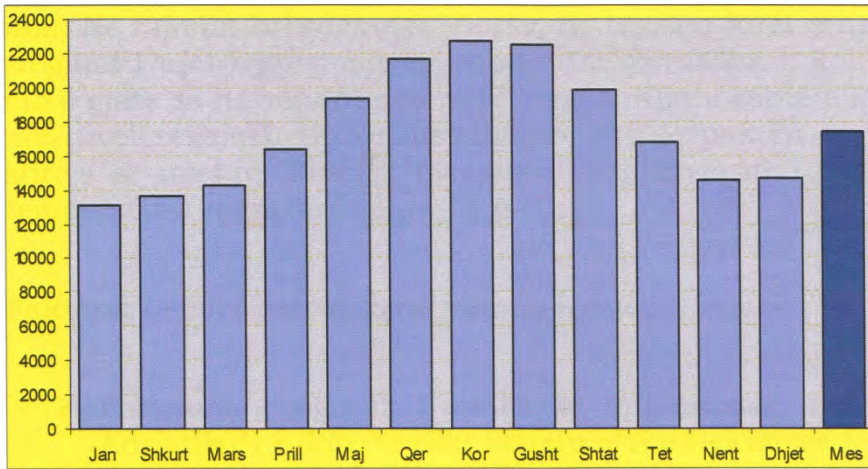


Figure 7: The intensity of solar radiation on average for Vlora kJ/m², day.