

Industrial Landscapes Between Environmental Sustainability and Landscape Constraints: The Case Study of Euralluminia in the Sulcis Area of Sardinia (Italy)

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1 ABSTRACT

In Italy, industrialization had a remarkable development in the 1950s and 1960s, and aimed with priority of ensuring economic growth and development. The location of the industrial complexes was determined by the dynamics of the production that required a territory equipped to supply specific infrastructures such as water connections, sewers, gas pipelines and the electricity grid, and above all areas where to build transport terminals capable of mitigating the costs of handling the product. This led Italy to locate industrial activities in many coastal sites, close to pre-existing urban contexts, resulting in a well-defined coastal industrial landscape especially in the areas of Southern Italy that were chosen as centers of development. Today, the determining factor for location choices is the cost of the workforce and this has made more and more frequent the processes of delocalization of the companies with worrying repercussions both for the direct and induced occupation and for the degradation of the landscape. This process, linked to the safety regulations, to the updating of the systems and to an increasingly more rigorous landscape legislation, makes critical the framework of the existing and not yet abandoned disused industrial realities. For these reasons, the main objective of this article is to evaluate the compatibility between existing industrial areas at risk of delocalization and new interpretations of the environment and the landscape to be reconstituted, in order to allow the realization of goods that maintain the levels of industrial production within a framework of ecological protection rules and recently adopted landscape constraints. In this regard, in this paper the authors use the Euralluminia industry in Sulcis in Sardinia (Italy) as a case study, in order to analyze the problem that concerns the uses in the territories with an industrial vocation and the landscape components, that deserve particular attention to safeguard not only for the economic and social context but also for the quality of the coastal environment. The case study is particularly significant because the Euralluminia industry for some years was at risk of delocalization because it needs of a conversion of some parts of the plants, blocked due to the landscape regulation imposed by the Superintendence of Cultural Heritage of Southern Sardinia for the expected changes in the coastal environment. Therefore, keeping in mind the theories of localization and the pushes for the delocalization of the industrial contexts, the study discusses the importance of the interconnection between economic and landscape factors paying particular attention to the coastal areas.

Keywords: Euralluminia, Environmental Sustainability, Landscape Constraints, Industrial Landscapes , Smart Region

2 INTRODUCTION

For production activities (industries, large commercial chains, agricultural and livestock production) the territory is no longer the keypoint for the location choices, because the theory of the lowest transport cost (Camagni, 1980), from the product and from the correlated production processes to the origin is not decisive as it was before, when the production system at international level was not yet "governed" by multinationals interested only in the financial market (stock market quotations and more).

A factor that has instead assumed a relevant dimension for the location choices is the labor cost, especially when it comes to "heavy" productions that employ hundreds of people with work contracts that are not competitive with respect to those applied in emerging and developing countries (for instance India). For this reason, relocation processes are increasingly frequent for companies that "employ a lot of manpower" and that must remain competitive with respect to competitive markets even when the size of demand changes at local, national and international level.

In Italy, this problem is having worrying dimensions and is not currently easy to find solutions because without radical interventions, which unfortunately mainly affect the workforce, companies decide to move production processes in other countries, leaving the previously used territory, without remediation and restoration for pollution and for degradation.

In addition, the investment models for the socio-economic development of the various Italian contexts (for example the theories on the industrial development poles of the South are outdated) changed, such as the problem of the land consumption is in constant evolution to allocate businesses, which produce technologically advanced tools for the digital society. This type of low-polluting activities (noise, processing waste etc.) does not require dedicated areas "outside the city" but lends itself to revitalizing urban centers.

In Sardinia, the framework of existing industries and of the ones that are not yet disused (in sectors such as mining, petrochemical and energy) is very critical and lends itself to operations of relocation with worrying repercussions for the direct and induced job.

Unfortunately, in Sardinia - but also in other regions in Italy and in Europe - the decision-making process is uncertain and too slow for taking structural initiatives, capable of reconverting already vocationally industrial areas, such as the Sulcis-Iglesiente in the Province of South Sardinia.

Even for the energy sources (that replaced coal in that area) is a lot of uncertainty and this does not favor negotiations with non-Sardinian companies that require preventive guarantees. The territorial offer is also lacking in administrative and bureaucratic facilities. Considering these assumptions, Figure 1 shows two important industrial areas (Machiareddu and Portovesme), in the southern of Sardinia, that are in crisis for many years with great difficulty in finding reliable policy-makers interested in intervening.

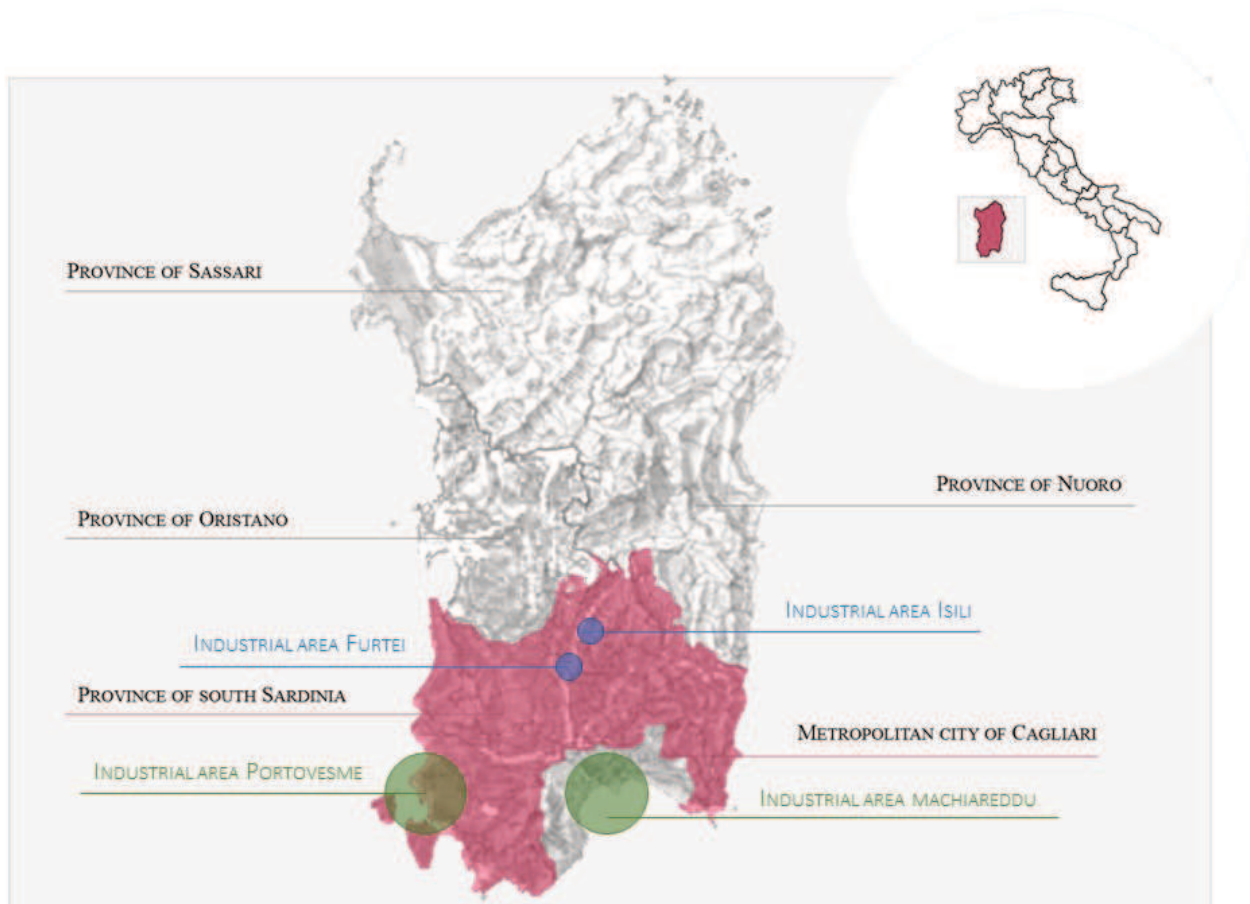


Fig.1: The Province of South Sardinia with the industrial areas of Portovesme and Machiareddu

The analyzed case studies want to focus on the problem that concerns the intended use in the territories with an industrial vocation. In addition, the components of the landscape deserve particular attention for the protection not only of the geographical context but also for the quality of the environment in presence of "polluting" activities.

3 ENVIRONMENTAL SUSTAINABILITY AND LANDSCAPE CONSTRAINTS IN SARDINIA

In this discussion, the historical process to evaluate the decision-making behavior of the policy on the territory with the succession of legal rules (of planning and of bargaining) is really important because in the past 50 years also the economic interests of the companies changed and, with them, the formulas for

establishments managing, for realigning the use of new technologies and digital tools and finally for increasing the competitive and unstable market frontier.

In addition, the historical process allows to understand the substantial changes in the way of life and the relationships of the inhabitants with the new dimension of the relationship space. It is hard to believe it, but different philosophies of thought with as many behavioral codes are still evident. The historical conflict between two cultures, the agro-pastoral one and the urban-industrial one, consolidated in this area of Sardinia, arose because the former was a simpler culture measured by the sites and the environment, while the latter was considered a certainly more advanced culture, but complex to evaluate the balance between the built and the environment (Mistretta, Garau; 2011).

It is also necessary to take into account how much the territory identifies itself as an expression of people's well-being or people's suffering, so much that in some cases it creates habituation phenomena and little interest in changes, in other cases it can produce the appreciation or refusal of projects aimed at having large industrial complexes which, through steel and reinforced concrete structures, verticalized by fireplaces with a continuous flame, the productive culture and work of thousands of workers are a diversified expression of industrial culture.

Therefore, the reasoning cannot be reduced to the tension between safeguarding the landscape "tout court" and the production process of industrial activities. In fact, in continuity with the plans launched in the context under study since the 1960s, the territory is equipped with specialized ports, road infrastructures and with technological energy and hydraulic networks. In addition, the classical rules of homogenizing the building typologies cannot be applied on the urban planning for industrial use, because the evolutionary scenarios of the production system of each company (from the first phase of the establishment to the subsequent phases that guarantee the competitiveness of the industrial product in the markets by innovating the establishments for production) require volumetric flexibility for the working spaces and for the use of the areas. This presupposes an Urban Master Plan (UMP) with non-detailed intervention proposals in order to use the territory in a way that incentivize the location of new companies and the relaunch of existing ones.

Unfortunately, the tendency to plan the territory in a sectoral way, both dimensional and typological one, does not allow to evaluate the processes and the proposals (even if they are excellent from a technical planning point of view) in a more composite framework of theories, experiences and professionalism that represent as many ways of operating, but with different goals.

This cultural and planning "conflict" occurs when green economy proposals call into question the persistence of economic realities that are still financially and occupationally efficient. This does not mean that all the industrial settlements that played an important role in the development of the areas and in the regions in which they operated are to be safeguarded without taking into account the necessary environmental and hygienic-sanitary remediation and those concerning the typology of buildings with new technologies. In other words, the compatibility between green expectations and the related guarantee rules must be guaranteed with a smart collaboration between public administrations and private operators in order not to cause irremediable crises that could induce delocalization processes that are in any case harmful to the general economy of the territory. This is to establish the relationships between the different social and economic functions for estimating the central level that are able to express the settlements.

Sardinia is an emblematic case because the legislation on landscape safeguarding (through the Regional Town Planning, RTP of 2006 [Garau Pavan; 2010; Pintus et al., 2019]) of not building within 300 meters from the sea in the coastal areas struggles with existing and economically active situations that concern two specific typologies: 1) the hotel accommodation; 2) the industries activated on lots that are part of specific industrial development plans, of which Sardinia, like the other regions of Southern Italy, was able to benefit from the industrial development poles (1965) to be located in the areas with the highest settlement vocation such as Cagliari with its port called "porto Canale".

The authors are well aware that the "remote past" in urban planning can only have an experiential value for changes in the rural environment and in particular on the organization and remuneration of work, but it cannot be underestimated because the effects of the medium and long term are still evident in the territory with the urbanization works of scale and with the redistribution of the inhabitants urged by the central functions of the cities with directional activities (Cagliari, Sassari). This presupposes the precise identification and planning of the functional areas at urban level and of the infrastructures, directly related to

the traffic flows, which have a particular meaning when they integrate the commercial and service functions with the other more important ones than the residential ones.

The habit of people, in general and without being socially and economically involved, is to look only at the geographical and environmental composition of the landscape, expressing a cold or emotional judgment based only on the aesthetic components, although behind the eye of the beholder of the landscapes, they are the different components of its DNA. Behind the eye of the viewer, the different components of its DNA coexist: environment and social context, affection for places, quality of life and level of well-being, education, culture, sensitivity, experience, age and gender.

General data of the Eurallumina company	Eurallumina is a company, today 100% owned by U.C. Rusal, through its subsidiaries, which built in the early 70s and operates in Portoscuso in Sardinia, in the Sulcis Iglesiente industrial area, an establishment for the transformation of bauxite into alumina (aluminum oxide) according to the Bayer process. The company operates on a transformation account for its shareholder or for U.C. group companies. Rusal which supply the establishment with bauxite and collect the alumina and aluminum hydrate produced. Eurallumina, therefore, does not directly sell its products on the market but delivers them entirely to the shareholders who, in turn, market them through the United Company Rusal.
Production Establishment	<p>The Portovesme production establishment entered in production in May 1973 and has a potential production of approximately 1,100,000 tons/year. On 30 November 1990 the Council of Ministers adopted the resolution with which the Sulcis-Iglesiente area was declared an area at high risk of environmental crisis pursuant to and for the effects of art. 7 of the law of 8 July 1986, no. 349, as amended by art. 6 of the law of 28 August 1989, n. 305.</p> <p>In 1993 the Ministry of the Environment highlighted the main environmental problems in the Sulcis-Iglesiente area and the examinations and discussions with the bodies involved and with the appropriate coordination committee State-Region-Local authorities, on April 23, 1993 with Decree of President of the Council of Ministers n. 72, the decontamination plan for the restoration of the Sulcis -Iglesiente area was approved.</p> <p>In the conclusions of this document (point 2.4) of Chapter 2.0 "Summary of environmental problems", the main problems were hierarchized into 6 points, including Point 4: "the aspects of landscape and urban degradation and marine pollution related to the presence of the industrial center of Portovesme, although not insignificant, appear to be second-rate, especially in view of their limited extension (essentially limited to the areas closest to the pole, in the Municipality of Portoscuso), verified on the basis of available data".</p> <p>The production of the Eurallumina establishment was temporarily suspended in March 2009 after about 36 years of uninterrupted operation, due to the changed cost situation, mainly energy as mentioned in the 2009 Memorandum of Understanding and in the subsequent addendum of 2012, which they undermined economic competitiveness, and because of the global economic crisis that brought down the demand and price of alumina.</p> <p>Economic competitiveness, on the other hand, is critical for the high production costs, largely due to structural factors such as: the high cost of energy and the distance from the source of supply of the raw material (bauxite from Australia).</p> <p>The technological competitiveness of the Eurallumina establishment is good, although it can be further improved by using tri-hydrate type bauxites.</p>
The Industrial Establishment	The Eurallumina establishment was built by EFIM (through ALSAR), in the 60s and 70s, like the other main establishment in the aluminum chain which form part of the Portoscuso Industrial Core with the aim to create a strategic hub of worldwide importance for the production of aluminum. The industrial area was built near the sea where an existing port was also expanded to make it suitable for unloading raw materials and shipping products.
Employees	Eurallumina currently has about 300 employees, many of whom have long experience in the refinery. Today, despite the suspension of the production process, the company guarantees the maintenance of the establishments using 70 daily work units in the company.
Regulation for this area (Scope Datasheet n° 6 Carbonia and Sulcitane Islands pp. 11 - 12 of the RTP)	<p>"1. Redevelop the coastal landscape of the inland sea between the archipelago and the mainland, rebalancing the relationship between industrial activities, traditional fishing activities and tourist use, in a perspective of integrated conservation and management of the Area, also in reference to the "Marine area to find the island of San Pietro".</p> <p>2. Progressively rebalance the relationship between the industrial presence of the Portovesme pole, the urban settlement, the tourist use, the agricultural activities and the marine and lagoon fishing of the Area, reducing the problems of interference of industrial activities with the environmental system.</p> <p>3. Redevelop the areas of industrial degradation, selecting priority areas of intervention, on which to activate a progressive process of clean-up and environmental regeneration, which requires unitary coordination for the municipalities concerned in relation to problems of high environmental risk, for the programs of pollution control and environmental monitoring."</p> <p>4. Part of the red sludge basin, the coal loading area (CHP site), the area on which the conveyor belt insists (site 2), the area of the Eurallumina port quay fall within the coastal territories included in a strip of depth of 300 meters from the shoreline, even for high ground on the sea.</p>

Table 1: identity scheme of the case study of Eurallumina

With these premises, the main objective of this article is to evaluate the compatibility between existing industrial areas at risk of delocalization and new interpretations of the environment and landscape to be

reconstituted, in order to allow the realization of works that maintain the levels of industrial production within a framework of ecological safeguard rules and recently adopted landscape constraints.

In this regard, in this article the authors use the Eurallumina industry in Sulcis in Sardinia (Italy) as a case study, in order to analyze the problem that concerns the intended use in the territories with an industrial vocation and the components of the landscape, which deserve particular attention to safeguarding not only the economic and social context but also the quality of the coastal environment. The case in question is particularly significant because it encompasses the fundamental points of the discussion. In fact, the industry is at risk of delocalization for some years because it is asking for reconversion of some parts of the establishments, blocked due to the landscape relationship which provides for changes in the coastal environment which are excessive for the Superintendency of Cultural Heritage of Southern Sardinia. So keeping in mind the theories of location and the pushes for the delocalization of industrial contexts, the study discusses the importance of the interconnection between economic and landscape factors, paying particular attention to coastal areas.

4 THE EURALLUMINA OF SULCIS IN SARDINIA

The topic is particularly felt in Sardinia because, of all the industrial interventions realised in the past decades, the only one still in activity is that of the Sulcis Iglesiente which, heir to the mining culture, demonstrates competitiveness in the national and international market. Therefore, the case study that describes the events suffered by Eurallumina, constitutes an opportunity for political reflection and scientific evaluation that can be compared with other realities in Italy but also in Europe in corporate suffering due to localization factors.

The U.C. Rusal (global aluminum producer) as an example of resistance in Sardinia

Before tackling the discussion on the compatibility between industrial settlements and the protection of the environment and the landscape, it is necessary to analyse the most significant data through the table 1, in order to know the context and to understand the attitude taken by the various public decision-makers and environmental associations.

After Table 1 which describes the Eurallumina establishment, it is necessary to underline the points on which the technical discussion that empowered the political decision maker of the Sardinia Region and activated the binding opinion of the regional Mibact on the compatibility landscaping required for changes to the systems of the production system.

Environmental remediation (4.1.1): 1. Hydrogeological with reference to aquifers to eliminate causes and effects of pollution; 2. sanitary hygiene to make the area affected by the fumes of the production cycle healthy

Landscape compatibility (4.1.2): 1. the intended use of the area of land included in the Sulcis Iglesiente Industrial District with the destinations of the 2006 RTP; 2. the impact of the company's structural changes on the coastal landscape

4.1.1 Environmental remediation

After five years of discussion, not without tensions with the workers of the factory under the cassaintegration regime, the Board of the Sardinia Region adopted the plan presented by the RUSAL company regarding the interventions on the aquifers, on the red mud accumulation basins, on the emission of fumes and finally on public health not only referred to workers but also to the populations of the Municipality of Portovesme and the impact areas, concluding the procedure with the approval of the Environmental Impact Assessment (EIA) DELIBERATION N. 49/17 OF 5.12.2019). A complex document that analyzes all the most delicate points of the conversion of the industrial plant which in fact authorizes the resumption of the production process until January 2020. A historical result that rewards the tenacity of the workers who fought for this goal.

In fact, the restarting of EurAllumina is crucial for the recovery of the Alumino supply chain, which is valid as an official statistical multiplier of 1450 total jobs.

4.1.2 Landscape compatibility

Unfortunately, this is still an open problem because the Superintendency of Cultural Heritage of Southern Sardinia, which had not pronounced at the conference of services promoted by the Region, expressed its

contrary opinion in its own seat for some of the proposed changes as they do not respect the environmental and landscape value requirements referring to the territory concerned. Another chapter of the infinite dispute that once again highlights the conflict of competences between a State body and the Sardinia Region, which according to the Statute has primary competence in urban and landscape matters.

To better explain the size and content of the respective interpretations, authors believe it useful to make some reflections on the interpretation of the natural environment and the landscape with reference to some points:

- a) The first one marked by the physicality of the places and their interpretative relevance. However, although geodiversity is the most characteristic and stable landscape factor over time, it is not sufficient to excavate and study the anthropological components of the past and the current ones that emphasize the mountains, valleys, villages and cultivated fields.
- b) The second one takes into account the anthropization in the history of the island through the types of settlement in the form of scattered villages and houses (Gallura and Sulcis) and which contribute to humanising the coastal landscapes, the flat hinterland, the areas of mountain.
- c) The third one identifies itself as an expression of people's well-being or suffering, so as to create in some cases, habituation phenomena and of little interest in changes, in other cases the appreciation or rejection of the projects aimed as in the realities where they coexist large industrial complexes which, through steel and reinforced concrete structures, verticalized by the chimneys with a continuous flame, are a diversified expression of the productive culture and work of thousands of workers.

Attention to the historical process is fundamental to understand the substantial changes in the way of life and the relationships of the inhabitants with the new dimension of the relationship space where different philosophies of thought are still evident with the historical conflict between the agro-pastoral and urban culture -industrial. Great attention must therefore be paid to the ability of the communicative language that makes the relations between politics, economy, land use and environment manifest (Mistretta, Garau; 2011).

Furthermore, it should be considered that the European Landscape Convention (Council of Europe, Florence, October, 2000) has brought substantial innovations to the interpretation of the landscape and to the method for safeguarding and designing. Particularly significant is the description of the landscape, seen as "a certain part of the territory, as perceived by populations, whose character derives from the action of natural and / or human factors and their interrelationships". (Art. 1 letter. A). Equally important is the subtitle which on the "safeguard of landscapes" «indicates the conservation and maintenance actions of the significant or characteristic aspects of a landscape, justified by its heritage value deriving from its natural configuration and / or the type of human intervention» (Art. 1 lett. D).

This description of the industrial landscape of which Eurallumina was not considered sufficient to allow the regional superintendency of MIBACT to express a positive opinion on the changes described in the redevelopment and relaunch projects of the industrial process. In fact, to justify the negative opinion, the regional superintendency of MIBACT notes that the context is characterized by: a) natural and landscape features of exceptional relevance, characterized by the presence of numerous assets - protected by the law pursuant to Art. 142 of the Code; b) characterized by the succession of lagoons and dune complexes; c) directly overlooking the coast; and therefore; d) inserted in an aqueous space of relationship in which the various coastal contexts (Calasetta, Carloforte and S. Antioco) constitute mutually perspective and landscape scenes.

In this regard, the authors indicate the most significant observations (Biolchini, 2011) made for the discussion on the landscape in industrial areas already built and subject to innovation:

1. The project presented does not show the implementation process of the mitigation works, on the contrary it would seem that "the proposed mitigation works are feasible only at the end of the cultivation of the relative deposit and that the intermediate landscape impacts generated in the long term are not taken into consideration period for using the landfill"
2. "The final evaluation of the VIncA regarding the "wetlands" (SIC) immediately concerning the deposit of the" red mud "has not yet been acquired and, therefore, it is not possible to evaluate the impact of the project in question on the conservation of the 'natural area, recognized as a landscape asset by the RTP and, therefore, a subject of direct interest of this Superintendency for its conservation".

3. "The intervention is likely to adversely alter the skyline that characterizes the context of the numerous areas declared of considerable public interest pursuant to art. 136 of Legislative Decree 42/2004" as "The works envisaged by the project are in clear visual relationship with a vast air of the coastal territory" with "significant and negative morphological changes observable from numerous lookout points - including the water mirror included between the coast and the Sulcitano archipelago - also subject to protection".

4. In this regard, it has yet to be highlighted that "the expansion of the Red Mud Basin determines the occupation of soils currently also free and it doubles the height of the landfill, generating a huge artificial hill of toxic waste, about 40 meters high".

5. The works envisaged by the project further contribute to altering the systems of relationships, introducing new elements of strong impact, absolutely dissonant and not compatible with the quality elements that the measures protect and that find in the water in front of the privileged area of relationship natural and environmental emergencies that define a context whose panoramic value is recalled by all the protection measures that are part of the coastal marine space which represents the identity and relationship element of the complex system of historical center, settlement and environmental resources with the centers urban with a historical layout (Carloforte, Calasetta, Portoscuso, Sant'Antioco).

The Superintendency concludes with this negative opinion: "definitely, the intervention conflicts with the protection purposes defined for the area concerned since it increases the landscape impact of the existing industrial complex and therefore is not consistent with the rules of the RTP explained for the areas of environmental recovery and in the reference area"

5 DISCUSSION: REASONS AND DEDUCTIONS ON THE INTERPRETATIONS OF THE LANDSCAPE OF PORTOVESME

It is important to consider the validity and legal competence, translated on the territory, of the RTP (approved with regional law 25 November 2004, No. 89) and those of the Provincial Industrial Consortium Sulcis - Iglesias (established with LR No. 10 of 27 / 07/2008) on the areas included in the Portovesme area (Fig. 2). In fact, it is necessary to assess whether the purposes of the 2008 law (SICIP) are conditioned by the previous provisions of the RTP (2004) which would subordinate the objectives of the same law described in article 1 letter a) and b) with the obligation to ensure coordination of the interventions.

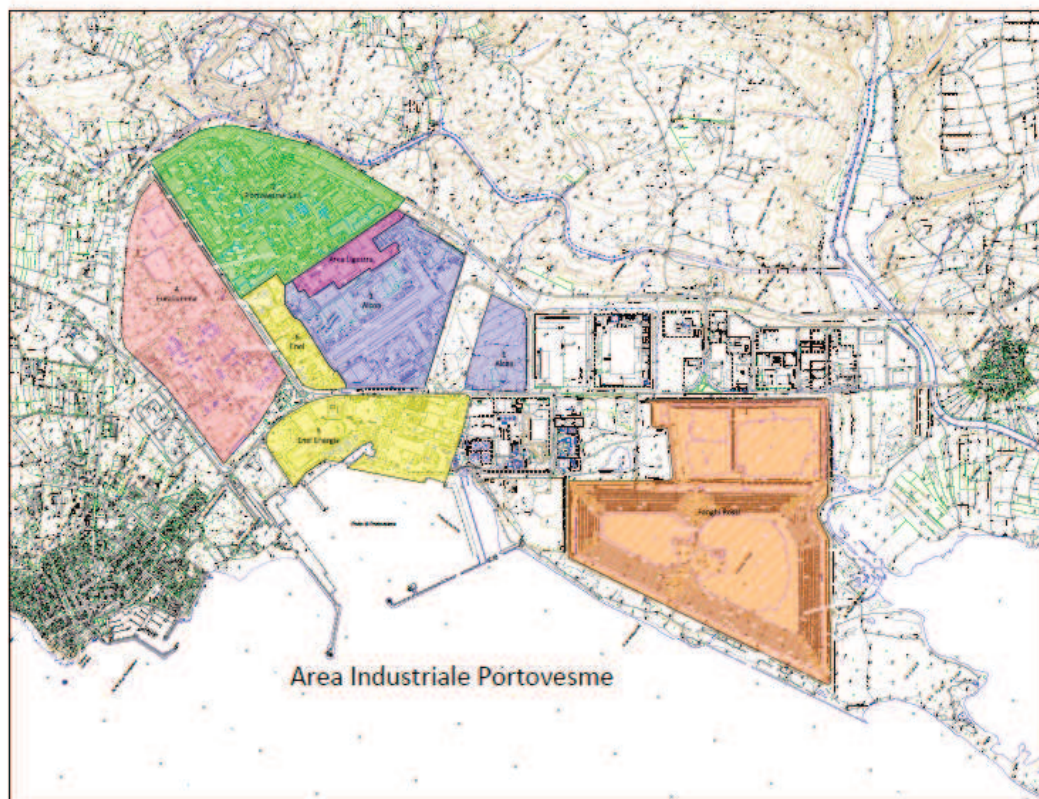


Fig. 2: Portovesme Industrial Area

The reasoning is not only based on legal quibbles inherent in the consequentiality of dates and intentions of the Regional Legislator - "fought" between the industrialization and the landscape protection of a territory with an industrial vocation since the 1960s, which has equipped itself with a port specialized, with road infrastructures and with technological energy and hydraulic networks paying particular attention to the compatible treatment of waste water with the natural river basin - but on the planning of the territory for industrial use which requires not only the installation of industrial activities in the lots to be assigned to the individual companies, but above all the evolutionary scenario of the different production systems of each company, from the first phase of the establishment to the subsequent phases to guarantee the competitiveness of the company product in the markets by innovating the production systems, reducing the energy cost and keeping the specialization of the workforce high.

Therefore, the analysis of the document of the Superintendency resumed below to make the deductions based on the interpretations of the landscape, already formulated in this paper.

In point 2 at letter a) reference is made to the "natural and landscape features of exceptional importance". It is important to emphasize that in the on-site and remote inspections it has been difficult to find cultural and substantial reasons to justify "landscapes of exceptional importance". In fact, the territory included in the S.I.C.I.P. consortium, even if all the existing industries were eliminated, would have a flat morphology, barely moved by the artificial hills produced by the landfills of the mines, today covered by spontaneous Mediterranean vegetation. In other words, although there are significant landscapes that Sardinia also shows in the Iglesias area, this area of Eurallumina does not deserve any attention and therefore no invitation to visit it by virtue of the natural landscapes (Fig. 3).

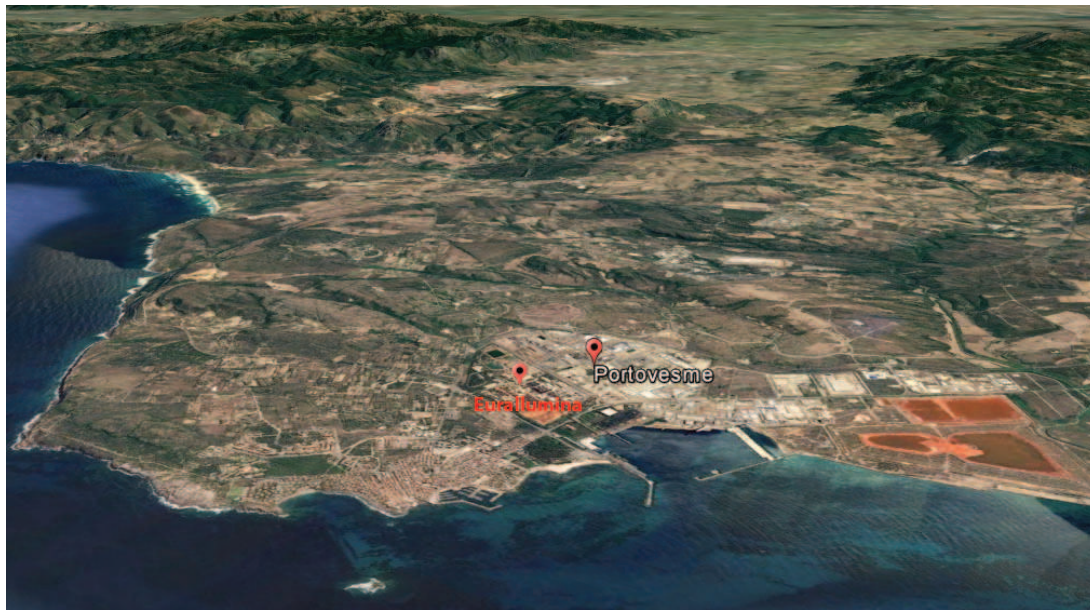


Fig. 3: Panoramic view of the territory without emerging factors of importance (Google earth)

This judgment is not intended to be malicious towards Portoscuso and its inhabitants, but can also be confirmed by the remote visions which are considered important in the Superintendency document with reference also to the horizons observed by Carloforte and Calasetta.

In point 2 at letter c) it is possible to evaluate how much the industrial establishment and the sludge basin are "directly facing the coast". It is quite obvious that we are dealing with a company that was born and develops its production in front of the sea as the supply of raw materials is guaranteed by ship carriers placed alongside the docks of the specialized port. So all the equipment for transporting materials to the storage area, which are part of the production process, must be viewed with the emotional attention that the conveyor belts at height with their structures.

As for the prospecting on the coast of the mud basin, the problem is less significant because with the natural vegetation that already guarantees the total mimicry of the retaining walls, the elevation of the main basin will be seen from below as a green hill facing the sea. A sea front of very little value composed of breakwater boulders and one that extends for a few kilometers and which does not offer bathing spots. With regard to the mitigation that according to the Superintendency would not be guaranteed with continuity over

time, it is noted that they are instead guaranteed by the spontaneous vegetation that grows along the stone walls, in steps, camouflaging them with the continuity of the seasonal rhythms.

6 CONCLUSIONS

To conclude this discussion on the interpretation of the landscape that reinforces the emblematic nature of the Eurallumina question in Sulcis Sardinia, the authors consider some food for thought (on which they have already had the opportunity to express themselves) which are useful because they open up to a Sardinia to be “known and to love” not only through the slides and posters posted at the airports or entrusted to splendid videos, as well as to the many books on landscapes, beaches and culturally effective cultural heritage, but which do not reveal the true characters of the island society.

In any case, the relationship and the difference that exist between the impact of “things” on the landscape and the visual impact is important, as the former affects character, quality and cultural factors; the second is limited to seeing the changes through the available “views” and the effects they have on people. There is not necessarily coincidence between the two, in fact the impact on the landscape can also occur in the absence of a visual impact where the development is, for example, completely shielded from the available views; and similarly, when in already characterized areas very high works for mainly technological use emerge (electric pylons, wind turbines, industrial chimneys, antennas). And this is why the authors defend the thesis of the interpretative flexibility of the landscape; because it is necessary to take into account and foresee the possible changes in the territory that you would like to “fix” which in Sardinia are due to the extraction quarries, the mining landfills to be reclaimed, the forestation with the probability of fires, viaducts and road tunnels, productive settlements and the intensification of the agricultural use of soils which can influence geometry and also changes in natural factors.

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8 AUTHOR CONTRIBUTIONS

This paper is the result of the joint work of the authors. Pasquale Mistretta wrote ‘Discussion: reasons and deductions on the interpretations of the landscape of Portovesme’ and ‘Conclusions’. Chiara Garau wrote the ‘Introduction’. Giulia Desogus wrote the ‘Environmental sustainability and landscape constraints in Sardinia’ and ‘The Eurallumina of Sulcis in Sardinia’.

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