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Title:

Problem of the Integration of the Tools of Environmental Politics, SEA (ex Directive 2001/42/CE), EMAS (Rule 761/2001/CE), and New Model of Industrial Sustainable Area

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ABSTRACT

The study aims to analyse problems in the application of Strategic Environmental Assessment and new EMAS scheme in the industrial areas and/or territorial organization through desk analysis and case studies.

Case studies analysed are: Solofra' district and industrial developing area (ASI) of Trapani.

Main objectives are the ones of "Life Siam 2005" project: definition and analysis of level of vertical integration (from EU directives to local actions) and horizontal integration (from partnership for governance to the AG21L's forum) of sustainability's and governance's principles in local areas, starting from the decision to localize and manage industrial areas.

We analysed some national industrial areas and problems in applying EU regulations in the field of sustainability.

The study aims to contribute in order to shedding lights difficulties of integration different voluntary instruments into models, such as governance, or policy, such as sustainable development, and to make possible an innovative approach in the planning and territorial managing.

Summary

The main objectives of the study are to integrate the sustainability principles in locating, settling and managing industrial areas; to develop innovative methods, based on a preventive approach, for reducing environmental impacts and favouring the development of clean

technologies in these areas; to promote the continual improvement of the environmental performances, comprehensively, of the entire industrial areas and, individually, of the single local enterprises, especially those of small and medium size; to encourage a collaborative climate and an effective relationship among the local authorities, citizen and industry; to create the conditions for increasing employment and creating new professionals on the sustainable designing and managing industrial areas.

These objectives will be pursued by defining and applying a new Model of Sustainable Industrial Area based on using, adapting and integrating three different community environmental policy instruments: Strategic Environmental Assessment (SEA) according to the Directive 2001/42/EC; EMAS according to the Regulation 761/2001/EC; Environmental Accounting and Freedom Access to the Information on the Environment according to the Directive 90/313/EEC.

These problems are analysed through desk analysis and case studies.

Case studies analysed are: Solofra' district and industrial developing area (ASI) of Trapani.

The study aims to contribute in order to shedding light on difficulties of integration of different voluntary instruments into models, such as governance, or policy, such as sustainable development, and to make possible an innovative approach in the planning and territorial managing.

Moreover, the study wants to analyse how instruments of sustainable development, such as Agenda 21 and others abovementioned, has affected on the integration of environmental, social and economic policies and how they have sustained the implementation of a process which involves local authorities, industries, public in general in taking decision about the industrial areas. The study aims to verify as well what the perception of sustainable developing industrial areas is in the local authorities and how this has been taken into account in the governance model.

1 Introduction and objectives

The Italian productive system must tackle to international and local solicitations, which goes in different directions:

- international entreaties tend to reduce answer times with reference to the quantity and quality of the products realized;
- local urging regarding social, economic and environmental guarantees, explicitly required at least by workers and local community.

These objectives can be pursued by applying a new participation methodologies, in order to render more effective the answers to international and local urging. The EU tried to define a coherent normative chart, such as EMAS, SEA, Local Agenda 21, the informative directive in the field of environmental themes, that, if applied, can represent a unifying answer to both international and local solicitations.

Despite of the experts who give great importance to the voluntary approach, it is not so much followed nowadays, and it is applied with remarkable difficulties.

This study intends to analyse the practical problems and intend to emphasize a methodological approach which makes the voluntary approach easier so it could increase the effectiveness of the entire productive system.

The main objectives of the study can be simplified in this way:

- 1) to analyse the level of vertical integration (from U.E. directives to local actions) and horizontal integration (from partnership for governance to the AG21L's forum) of sustainability and governance principles in local areas, starting from principle and strategy followed in the localization and management of some industrial areas;
- 2) to analyse the experimented methods of shared territorial programming of development, based on a multidisciplinary approach, including partnership, programming, evaluation and monitoring;
- 3) to analyse the relationships between ASI (industrial development areas) and territory and the problems of its evolution towards sustainability;
- 4) to analyse the different managing and planning capability and skills which are necessary to the creation and growth of a collaborative climate and an effective relationship among local authorities, citizens, the productive system, experts, the scientists and professionals necessary to design and manage sustainable development, starting from industrial areas.

These objectives have been pursued thanks to the desk analysis and case study in the using pollution and environment data and application and integration of different EC environmental policy tools, in the procedures of governance carried out on territory and through the

comparison between the following case-study: the industrial areas of Frosinone and Trapani-Marsala.

The study would contribute in bringing into light the implementing difficulties in the integration of different voluntary community instruments inside model, such as governance, or policy, such as sustainable development, and would give a contribution in order to permit their innovative approach, for an integrated approach to planning and territorial management. The study aims to verify how the definition and the application of a “Sustainable Model of Industrial Area” is perceived in the Local Foundings and how these objectives are introduced in the territorial governance.

2 Methodology

The methodology of the study is based on an multidisciplinary approach which has worked out a set of indicators referred to social, economic and environmental dimensions. Then a multidisciplinary team has applied it into the analysis.

The data coming from:

1. specific questionnaires for local SMEs, institutions, experts, AG21L actors;
2. chemical, biological, natural/ecological and environmental data by official reports produced in the analysed areas by local authorities and statistical authorities;
3. socio-economic data.

All these data were analysed together with the stakeholders in order to have a previous agreement both on the methodology of analysis used and on the results produced.

The analyses has required the comparison of specific indicators but referred to different areas: the industrial one compared with the largest one where the industrial is located and where social community live. The latter is much more extended of the former and the two are strictly connected.

The evaluation is prepared with GIS system and mathematical model for decisional support both applied to final indicators values.

All these desk and on site analysis are for the definition of two specific elements: the “manager” of industrial areas and a managing pattern towards sustainability, and a specific “Model of analysis” in order to individuate plants and infrastructure that are useful for the sustainability of industrial areas.

3 LIFE SIAM PROJECT

The main objectives of this project, co-financed by EU, are to integrate the sustainability principles in locating, settling and managing industrial areas; to develop innovative methods,

based on a preventive approach, for reducing environmental impacts and favouring the development of clean technologies in these areas; to promote the continual improvement of the environmental performances, comprehensively, of the entire industrial areas and, individually, of the single local enterprises, especially those of small and medium size; to encourage a collaborative climate and an effective relationship among the local authorities, citizen and industry; to create the conditions for increasing employment and creating new professionals on the sustainable designing and managing industrial areas. These objectives will be pursued by defining and applying a new Model of Sustainable Industrial Area based on using, adapting and integrating three different community environmental policy instruments: Strategic Environmental Assessment (SEA) according to the Directive 2001/42/EC; EMAS according to the Regulation 761/2001/EC; Environmental Accounting and Freedom Access to the Information on the Environment according to the Directive 90/313/EEC;

A Technical Committee (TC), supporting the Project Manager (PM), will carry out the activities at the central level (actions concerning study and investigation, model defining, guidance elaborating, etc) and co-ordinate the activities of Local Committees (LC) (experimental actions). Each Local Committee groups an industrial area and related local authority and/or the organization managing the area and is assisted by a Consultative Forum including all the interested parties. Firstly, TC will conduct a preliminary study on the ecologically equipped industrial areas and define minimum requirements for them; then it will define a Model of sustainable industrial area including sustainability criteria and their audit. The model will locally be tested and, on basis of the results, a Guidance will be issued. To satisfy the need of new professionals, being able to design and manage industrial areas in a sustainable way, specific and certified courses will be performed. All the results will be largely disseminated at national and community level and the proposed Model will be successively tested in the New entering countries. Some project partners and local enterprises intend to obtain EMAS registration, assigning practical evidence and solidity to the project. The project started in September 2005 and will be completed in September 2007.

Main expected results are: contribution to integrate different community instruments (both mandatory and voluntary) and their innovative use in territorial planning and managing, identification and implementation of a new way to apply the sustainable development principles, encouraging the integration of environmental policies and socio-economic policies, by a process together involving local authorities, industry and public in general.

The project's results will make it possible to solidify a Model of Sustainable Industrial Area that can then be replicated elsewhere in the EU and outside the community territory.

The LIFE SIAM project is developed by 19 partners. It is very important to underline that the partners are coming from different experiences and fields: both public and private research

centre, private society of technological management for SMEs, local institution as municipalities and provinces and consortium management of the industrial area.

4 Italian productive settlements: Ecologically Equipped Areas and Area of Industrial Development.

The study has analysed the state of application and the problems met, also in the light of necessary integration of various instruments for sustainable development and also the process towards the achievement of higher sustainable development standards, in the industrial areas how it is afterwards defined.

The “ecologically equipped area” has been introduced in the Italian legislative order by the D.Lgs. n. 112/1998 (called “Bassanini law”) which expects at the article 26 that “Regions discipline, with their own laws, industrial areas and ecologically equipped areas, provided with infrastructures and systems necessary to ensure the protection of the health, safety and environment”.

The introduction of this new concept of productive area, thought from environmental point of view, provided with technical and organizational requirements directed to diminish and to manage the pressures on environment in an integrated way, is born for the need to substitute the so-called “end of pipe” approach (demolition of pollution at the end of cycle) with the principles of precaution and prevention against pollution. In particular the question is not to act on the specific environmental equipment of firms, as it happened till now, but the question is to organize the productive site so as to favour the individual settled firms on realizing their own environmental objectives, both economically and technically.

The ecologically equipped areas have to be planned, realized and managed on the basis of “ecoefficiency” criteria, in order to ensure an integrated system of management of environmental aspects, reduction and prevention of air, water and soil pollution, the protection of the health and safety as well as a widespread environmental improvement of territory.

The productive plants settled in ecologically equipped areas are exempt from the acquisition of authorizations concerning the use of services which are present there.

After observing the regional Italian legislative panorama on the accomplishment of the article 26 of the D.Lgs n. 112 of 1998, it is pointed out that Liguria, Emilia Romagna and recently Marche were the sole to legislate in entire manner, that is to say with regional law and relevant implementing regulation, how it results from their respective LR 9/1999 and DGR 648/2003, LR 20/2000 and finally LR 20/2003 and DGR 157/2005.

Two others Regions, Toscana and Puglia, promulgated a law on the subject but none of them had the regulation of completeness.

The sentence 69/2004 of the Constitutional Court intervened on Puglia's law declaring the constitutional illegitimacy of the article 4 because of violation of the constitutional norms in the matter of power attribution- art. 114,117 and 120.

Inside this understanding law, it is generally expected that the Region promulgates the law which identifies criteria and parameters for the definition of the industrial equipped areas and ecologically equipped areas within adequate period and that the jurisdictions of Region, Provinces and Commons are outlined, referring back to an ad hoc law on subject and to a regulation which prepares the concrete instruments capable to carry out the law.

After comparing the poor normative references with the insufficient experiences realized out of borders ("Are industriel Europe Mediterranee de l'Arbois- Petit Arbois- Marsiglia, equipped with a station of rubbish selection, "fitodepurazione" systems,- and with a consortium of management certified ISO14001) we can think about the A.I.E.A. as an area in which there is a community of concerns that supplies goods and services, connected from each other by infrastructural nets able of improving the economic performances and of minimizing the environmental impacts by the placing on environmental management, of natural and energy resources.

If we want, we can define in a more synthetic way the distinctive elements of the "industrial ecologically equipped area" as it follows:

- Subject which manages infrastructures, services and equipment at its disposal;
- Technological and infrastructural contents of high quality;
- Environmental management of high quality.

The concerns belonging to the area can receive a benefit from this model, and this benefit will be larger than the sum of benefits that each company realises if it exclusively optimizes its own performances.

On the other hand the Industrial Development Area (in such a way in which they are disciplined by L 634/1957, L 64/1986, L 317/1991 and successive adjustments) can be divided into various industrial groups which identifies a territory (spacious tendentially homogeneous) of jurisdiction of several Commons in which the conditions for the carrying out of an economic and environmental transformation compatible with an industrial development according to predetermined lines, exist.

The so called ASI, (Area of Industrial Development) as instruments of integration, are tools capable to harmonize together general and scientific demands of concerns, in order to achieve, in the best way, certain objectives, among which:

- optimization of infrastructure and soil supply;
- reduction of clashes between applicants of the use of the best soil for site and location;
- supply of services in favour of concerns;

- environmental defence and control.

The managing subject covers a role of primary importance in every productive industrial environment. In particular an industrial area can be managed by two different kinds of Consortium with public, legal and economic personality: the industrial Consortium of “property mediation” and the industrial Consortium of “manager of installations”. The first one exclusively carries out a sale activity of plots taking an interest in their primary urbanization (roads, plants of water supplying, connections on sewerage etc...) but it does not manage or have infrastructures of Consortium. In particular it provides for:

the acquisition or the expropriation and planning of equipped areas for productive settlement, including the promotional action for the placing of productive activities in the areas mentioned above, the planning and realization of works of urbanizations and services, as well as the equipment of public spaces intended to common activities.

the sale and concession to concerns of plots in equipped areas;

the constructions of buildings, plants, laboratories for industrial and handicraft activities and warehouses in equipped areas;

the sale and location to the concerns of buildings and plants in equipped areas.

The second one, besides creating the necessary conditions for the development of productive activities, covers an important role on building and managing plants in service of concerns (purifier, energy cogeneration, mains of water provision, anti-fire systems etc...). In particular it supplies to:

- the building and managing of purification plants of rubbish of the productive settlements, of storage of special toxic and harmful waste, as well as the transport of the same;
- the recovery of pre-existent industrial pieces of real estate for their destination to productive aims;
- the practice and managing of plants of combined production and distribution of electric power and warmth in regime of own production;
- the purification of industrial “waterwaste” and the treatment of water for industrial use.

With respect to the first kind of Consortium, this second managing subject has a greater ability to control and to improve the environmental impacts generated from the industrial areas.

5 Analysis

Productive system and industrial areas

From the territorial point of view the phase of urban concentration of the industrial development has brought first to the formation of a definite process of urbanization, then to a

redistribution of the places of production external to the great city. The following phase of polycentric diffusion of the urban functions has brought to a process of restructuring and reorganization of the great cities that are substantially tied up to the tertiary growth and they don't know the trials proper of last industrial transformation.

The sustainable solution adopted by the net of urban and productive Italian system is, therefore, to build strong, complex and more harmonious relationship between the big cities and the small medium cities neighbouring the industrial areas which are linked each other.

But the ecological weakness of the small medium cities (at the provincial level) has highlighted the poverty and sometimes the lacking of marketing, transports, and environmental services for the productive system: it means the lack at local level of the more innovative and value added services for the enterprises, which compromise the possibility for them to grow and to compete at international level, especially in the innovative and sustainable way of production.

In order to produce a sort of territorial hierarchy, there are only the industrial areas (ASI), even though these are not often at the base of territorial planning: rarely in the planning documents there's a specific reference to them, although they represent specific areas of interest with specific problems, differences and characteristics and required specific analysis, and also a appropriate attention by local authorities in order to guarantee the sustainability of the areas.

These industrial areas still represent a strength point not only for local economy but also for the national economy, therefore we need to create a synergy between local choice and broader one toward sustainability, with the purpose to strengthen a net based on the existing urban cities and industrial areas, but in a more respectful and equilibrated system of relation between each other.

The productive sector leans on a net of relationships among enterprises and, among these, and institutional local subject and the environment contest in which they act; such system of reporting, it is able to offer meaningful advantages located near SMEs, must be preserved and strengthened, avoiding that the incompetence in to answer to the thematic technological and managerial, set by the environmental emergencies, determines possible crises of some sectors and the missed take-off of others.

The overcoming of this concept could be obtained through the gathering of two actual phenomena: the great opportunity of the present transformations from one side, and the optimization of planning and managing model of these toward sustainability from the other side.

From the studies completed by ENEA in different research projects for the Ministry of Environment is elaborated a synthetic representation of the situation of the Italian industrial areas under the profile of the sustainability: swot analysis has been applied to these areas and the most common and representative elements are summarized in the following table: the

analysis pointed out some elements of strength and weakness, some opportunities and some risks in the Italian industrial areas, although every area constitutes a singular case, both for the impacts and for the opportunities.

Table 1: Swot analysis of national industrial activities and their environmental problems

	Strength	Weakness	Opportunities	Risk
water	Planning wastewater treatment plant.	strong impact and production of significant mounts of industrial wastes	To improve the performances through the SEA and intensive use of EMAS I and II	To increase the environmental impacts and to overcome the "limits" of law
	Collective management of depuration plants	Liquid pollutants in agricultural and tourism zone	reunification treatment civil and industrial pollution	Habitat destruction and physical alteration, loss competitiveness on eco-technologies
Solid waste	availability economic and institutional for new plants of treatment	Discharge for solids waste full and social conflict against new plants	Production of energy	strength social-environmental conflict, reduction available soil
air	Reduction of toxic pollutants in industrial production	Few research in new non hazardous materials	Development of eco-technologies (BREF)	loss competitiveness on eco-technologies
		Emission by transport between SMEs	Change in industrial model	Few flexibility in management and market competition
soil	Partial separation among industrial and residential area (centre Italy)	insufficient separation, among industrial and residential area (north-south Italy)	Further separation between industrial and residential area and creation of bio-natural corridors	Reduction productive flexibility for unavailability of soil for new installations
	New based productive addresses on the knowledge	Excessive occupation of ground with extensive building and reduction spaces for activity	Planning of new productive cycles with higher technology and knowledge and lower impact	Impossibility to increase the production without occupying new spaces
institution	raised economic and social value of the surrounding territory	difficulty of interpretation and application of the environmental national Legislation	Improvement efficiency local and central institutions with EMAS and SEA	Loss innovative ability and of efficiency in facing the questions of development
	insertion of the firms in the regional and provincial social context.	phenomenon of immigration of mass.	Internationalization of the commercial and professional relationships	
	institutional attention to the sustainable development	Very intense use of the territory.	Flexibility in the destination of the soil	
	use of U.E. economic resource for activity of analysis and environmental planning	Non shared planning between institutions and enterprises	Formation of high environmental professionalisms	
transport	Shared planning of integrated systems of transport	net transports congested	Project of integrated logistics: common management and coordinated purchases, provisioning, stores	Increase of the costs and the times of marketing; loss of quality of the life; problems from pathologies to tall social cost
energy		Elevated energetic consumptions, gas use now completed, not use of renewable font	Development of new eco-technologies and management net energy	Increase of energetic and environmental costs
		Individualism of SMEs on planning systems of production and distribution	Shared planning for industrial area and for SMEs to optimize energy system	Strength social-environmental conflicts

Source ENEA, 2004

Effects of new Governance model towards sustainability

Within the study, we tried to clarify if the new models of governance for a sustainable territorial development had influenced and/or facilitated the actions inherent the sustainability.

Conducted analysis has tried to highlight emerging problems in the various phases of the process (planning, creation of partnership, implementation), making to emerge the possible solutions. Moreover, the study tried to understand if the European laws regarding Structural Funds have provide a real methodological and practical support; if these laws and some good practices, very emphasized and promoted,, result to be indeed as best practice for the territorial development toward the “sustainable development”, and if so, if is possible to measure it in comparison to the managerial practices of the past.

The data clearly points out some procedural innovations, thanks to planning methods that are more widespread, and provide a more integrated development of the territory. This is particularly true for the Integrated project, one of the main method to plan and use structural funds at local level, in which the actions of partnership in the definition of the goals and the actions have been positive effects, also in order to modify behaviours of the subjects involved. However, these Integrated projects miss connections both to the environmental situation of the territory, and, in general, to the concept of sustainability (social, economic, environmental and institutional related problems).

Considering AG21L, it appears insufficient in the phase of the environmental monitoring, and related applications of deriving results , from the actions of governance, while the certification of enterprises e/o territories it doesn't appear within the strategy programmatoria of the region e/o local corporate body or, at least, to the declarations of principle they don't follow concrete actions that stimulate somehow virtuous behaviours.

The SEA, even though it is enough clear the necessity of its application and the use of participatory methods is not included among tools used for introducing innovative practices of governance.

The ability and skills of evaluation of single projects is now consolidated especially in the fields of socio-economic effects deriving from them, but rarely these analysis consider sustainability effects.

Anyway, it is evident the abilities of analysis, planning, management deriving from projects financed by European Union: in those cases, important competences are been acquired by the local institutions during the last years. Although these capabilities seems to be rarely integrated with the environmental competences for management of the industrial and productive system.

In general, these competences created in some way during the last period, hardly affects multidisciplinary approach able to integrate partnership, planning, managing, monitoring.

Finally, the study has paid a particular attention to the ability of expense of the institutions, attention that influences the decisional action, contributing to the tendency to spend the resources there where (sectors and/or territories) their absorption is experimented.

State of application of UE normative in ASI

The state of application of (SEA) according to the Directive 2001/42/EC; EMAS according to the Regulation 761/2001/EC; Environmental Accounting and Freedom Access to the Information on the Environment according to the Directive 90/313/EEC

The national situation of application of these three documents in the national industrial system of ASI and industrial districts is presented in the successive table.

Table 2: level of application

directive	Level of application on ASI (% of total)	Level of application and on district (% of total)
SEA Directive 2001/42/EC	10%	25%
EMAS Regulation 761/2001/EC	11%	21%
Information Directive 90/313/EEC	1%	3%

Data: ENEA and CLUB of Industrial District, 2004

These data are work out by official certification and application EU directives, as regional SEA for Energy Plan and Transport Plan, and by similar action now not completed, and also is relative to the total action of analysis worked out by SMEs and research centre in many the national industrial area, elaborated with SEA methodology. In Italy there's a lot of industrial area that have elaborated a complete SEA, but as voluntary activities of a group of SMEs or stakeholders.

Only the 25% of the districts has promoted projects for the diffusion of cleaner technologies and environmental certification; 21% have in to be you grant voluntary in environmental field; few the initiatives on the use f the environmental budgets, on the marks of environmental quality of product; an only district is realizing a project of sustainable mobility; on competent 35 authorities of control to intervene, only 12 have furnished information on the controls effected on the enterprises of the districts; of these solo 4-5 corporate body have a systematic system of verifications and finalized to monitoring the

environmental benefits of the solutions of reduction of pollution put the enterprises into effect.

6 Study cases: Frosinone and Trapani-Marsala

Considering that LIFE SIAM project is on going and that we need to present only more representative cases, in this paper we present the data following from two case-studies, Frosinone and Trapani-Marsala: these has been chosen considering the importance of these industrial areas in the South of Italy and for the their capability to give an overall example of environmental problems.

One of the result of the analysis is that the organizational structures of the institutions and the managers of the industrial areas have a lack of professional skills to tackle the challenges deriving from the applications of UE normative and voluntary approach on the sustainability fields and governance.

Many municipalities and Provinces prepare “state of the environment reports” but they only marginally or only indirectly consider the industrial areas as a whole, although generally these cause consistent environmental impacts.

Among themes considered, it is possible to find those of direct institutional competence (air pollution, water refusals, water total consumption, solid waste), but is neglected the weight of essential sectors for the productive activities of the enterprises, typically energy and transports, or use of primary sources (for example water) for industrial and other productive sector localized in the same place, such as tourism or agriculture. The not deepened analysis of the industrial areas of the Local institutions, rarely allows to individualize, in the Plans of Local Action or in the Environmental Policy, the objectives of assessment of their impacts.

In this context inevitably the environmental monitoring, essential element to recognize the causes and types of problems and ongoing results of actions and, therefore, to look for some solutions with acceptable costs (such as to plan shared and common interventions, and/or elaborate specific measures), is worked out rarely together (in cultural terms) "with the industrial areas, and often only in terms of "command and control" instruments, and it doesn't support the voluntary one, such as EMAS and so on.

This reduces the positive effects of these advanced tools, such as EMAS, SEA, or the most largely experimented instruments such as AG21L, that are mutilated of an essential part – the agreement.

The Consortium and Manager of the industrial areas and districts hardly foresee the use in a eco-efficient way of the infrastructures and rarely programme multidisciplinary actions of environmental improvement, in order to analyse all involved aspects connected to a productive area, both internal and external to SMEs, or aspects that can be managed through common infrastructures and common solution.

By the analysis of case study carried out by ENEA it is possible to highlight the strength and weakness point of the industrial areas reviewed, as described in the next table:

Table 3: data of Frosinone and Trapani-Marsala industrial areas.

Weakness Point		Strength Point	
Frosinone	Trapani-Marsala	Frosinone	Trapani-Marsala
Proximity zones with elevated hydro-geological disarrangement	Proximity protected bio-natural areas		Availability of space for new economic activities
wastewater treatment plant inadequate	wastewater treatment plant inadequate	Very ample availability of water, pollutants monitoring present	Water consumption and pollutants monitoring present
production of significant mounts of industrial wastewater and strong impact in agriculture	Water lack		Plant of drinkable water by sea water
Discharge for solids waste full and social conflict against new plants	Solid waste plant treatment founded on obsolete technologies and without control	Plants for solid waste Treatment near	
Elevated energetic consumptions, not use of renewable energy font	Absence renewable energy Font	Completed gas use system	planning for use of energetic renewable font activated
Industrial Spaces of the ASI disarranged and not very ample	Industrial transport infrastructure non complet	some available industrial spaces of the ASI	Ample and available industrial spaces of the ASI
non correct air monitoring	Absence systematic air monitoring	net train near	Port near
neighbouring north municipalities oriented to industrial development		neighbouring south municipalities oriented to development on other sectors (tourism and agriculture)	neighbouring municipalities oriented to the same industrial development
industrial sectors with evident problems of market and redoubt shared planning of SMEs	industrial sectors not important for the economy of the territory	Medium Enterprise with high technological process	Multidisciplinary industrial production
Inadequate industrial infrastructures	Inadequate industrial infrastructures		
Presence of firms with elevated risk of industrial accident			
Absence certification EMAS		EMAS SMEs certification initiated	certification EMAS, ISO14000 present
careless management to the environmental problems, absence of SEA			High professional management of environmental problems, presence of SEA initiatives.
		AG21L completed	AG21I completed

Source: ENEA 2005

CONCLUSION

The sustainability of industrial system depend mainly on two elements: firstly, industrial, local community and institutional stakeholders and appropriate way to gather them in order to make possible a participated planning and, secondly,.

Both the industrial areas and the districts are still seen in Italy as elements of development towards a low technology and almost purely quantitative path of development; the qualitative motivation and sustainability issue are still almost absent in their planning and management system.

In the local institution remains a difference, which affects the results, among the lists of proposed indicators at higher level in different plan and/or instruments (such as QCS, SEA, EMAS) and the sets of indicators indeed used and their operational availability on the territory; which also signals the necessity of a revision and further effort towards a more homogeneous data available at local level, so all kind of institutions could work, in theory, using the same kinds of information and instruments. It is obvious it requires also an effort for enlarging and improving professionalism available at all level., providing the necessary scientific information. Without this innovation, especially the lower level of administration risk to remain under developed because the lack of new professionalism (respect to availability and what they are accustomed), new way of thought in order to face the challenges.

The absence of an organic system of objectives and criterions of sustainability remains one of the most important lack what it prevents to measure and to appraise the lines of project and the measures proposed in the Regional Operatives Plan of Development (POR) and in the Industrial Territorial Plan (PIT), as in the AG21Ls, e/o in the plans of development of the industrial areas, both in quantitative terms and qualitative. It needs to support them however with SEA and Governance use to define the objectives in coherent way and founded upon the regional specificities and worked out by an analytical evaluation of the attended effects.

It is remarkable the absence, at least in the analyzed cases, of capability on techniques of quantitative evaluations and previsional tools; so the effect of the measures is appraised in comparison to some single environmental objectives: it is not appraised if and how much the single objectives of environmental sustainability were pursued by the programs (and therefore it is not appraised "the integration" of the environmental objectives in the Plan/Programme).

In the industrial areas is present only a limited documentation on the SEA procedure and on Governance formalities of involvement of the various stakeholders, included the members of

public administration; also with some praiseworthy exceptions owed to a single sensitiveness of some technicians and professionals occasionally present in the area.

In the case analysed, the management of the industrial areas is not able to have suitable knowledge in order to produce a periodic report on the state of the environment, neither a periodic measurement of its quality: this is very negative considering one of the requirements of sustainability, the continuous improvement of the environmental quality. The two components (environmental analysis and monitoring), in fact, are essential to go further to a better situation: to do so, we need to quantify and evaluate the degree of attainment of environmental objectives and it requires ex ante evaluation and monitoring

The competent institutions can work out own normative function only if they have a system of alarm fast that notice at the right moment possible ecological changes.

However, nowadays, a lot of institutions, also the one which dealing with the management of the industrial areas, don't have neither the high professional competences needed inside the different institution, neither they have tried to create a net, unless in some cases, of new collaborations with the universities and centre of research present in the areas, , which are able to support them towards a more sustainable pattern of development. This professional deficit is accompanied to a scarce specific formative activities on the integration of sustainability instruments, evaluation and territorial planning (also the one foreseen by the law), as well as of the governance/participatory method.

Table 4: New Model of Industrial Sustainable Area (ISA)

<p>ability and fundamental functions: requisite essential</p>	<p>The requisite of the ISA are the essential elements and are “conditio sine qua non”; in absence of these elements defined as essential there cannot be apply the ISA model.</p>
<p>1) Subject Manager</p>	<p>The ISA is managed by a subject manager with functions and professional ability both in managerial and environmental field</p>
<p>2) Politics of the ISA</p>	<p>The effects of environmental politics will be measurable, for the optimization of the natural resources and for their saving. – also will need advanced politics in environmental, economic and social field</p> <p>The ISA maintains a level of good acceptability and no conflict with the other elements (economics sectors, urban system, cultural characteristic, social components) of development of the territory, and apply the Governance methodologies</p>
<p>3) The ISA respects the normative conformity</p>	<p>The ISA adopts a specific and autonomy control system to measure the materials input-output. -</p>
<p>4) Infrastructures and</p>	<p>The ISA is endowed with plants for the management of the</p>

them management	environmental, social and economic impacts – The ISA is endowed with nets of service for monitoring environmental effects and benchmarking
5) Analysis of sustainability and Plain of improvement	The ISA management apply the EMAS I° and II° normative and the SEA procedures to produces the environmental information for stakeholders and control the sustainability of industrial development in alls life phases: planning, design, construction, normal operation, decommissioning

Only the contemporaneous use of the SEA and the new model of governance can quickly render the institutions able to program a sustainable industrial development.

Only the managers of the industrial areas can have the economic resources and the appropriate competences to help the industries of the area to use the environmental technologies.

Concluding, although an increasing interest is evident toward the environmentally planning and the sustainable management of the industrial areas from Local Corporate body and subjects managers, there are still many weak points that have to be addressed for building the "model of sustainable industrial area."

Bibliography

- ANCI, CRESME (2005)-*Relazione sullo stato degli enti locali*
- O. Chitotti, A. Minidio, (2000), *Valutazione ambientale strategica: in Italia le prime leggi regionali in materia*. In Notizie dal Centro VIA Italia, n.16, settembre 2000;
- A. Cimino, (DIC. 2004) *Le problematiche ambientali nel distretto industriale conciario di santa croce sull'arno*. Rivista dell'associazione ANALISTI AMBIENTALI: VALUTAZIONI AMBIENTALI,
- Direttiva 2003/4/CE *Informazione ambientale: in materia di accesso ai documenti ambientali*
- EMAS Regolamento 761/2001/CE;
- ENEA-Ministero Industria - *Relazione Energia ed Ambiente 2004 capitolo 4-Ambiente*, VAS, Direttiva 2001/42/CE;
- Formez-Confindustria, (2003) *La pubblica amministrazione e l'associazione di imprese* Progetto SIMPLICITER.
- A. Forni, A. Cimino, I. Olivetti, A. Orasi, I. Salzano, F. Scipioni, R Squillace (2004) *Progetto PR7/E danno ambientale Allegato 1 Caso di studio: il distretto conciario di Solofra*; Ministero Ambiente e ENEA,
- A. Forni, I. Olivetti, F. Scipioni, A. Cimino; I. Salzano, M.G. Petronio, M.Valiani, R.Rosselli, I.Rossi, (2004) *Indagine sulla percezione dei rischi ambientali e sanitari nel territorio dell'az. usl 11 – zona del valdarno inferiore*. Rivista :Salute e Territorio, Regione Toscana
- N. Sottani (settembre 2004) *Convegno: Consumo del territorio*; Accademia Olimpica Vicenza (Provincia Vicenza, Osservatorio del Nord-EST)
- Posizione del Comitato per l'Ecolabel e per l'Ecoaudit sull'applicazione del Regolamento EMAS sviluppato in ambiti produttivi omogenei, Sezione EMAS del Comitato per l'Ecolabel e per l'Ecoaudit, 28/01/2005;
- Relazione task 2.2 Progetto LIFE SIAM (2005)
- World Competitiveness Yearbook 2003 (Fondazione Rosselli-Ministero Industria), CNR, 2 RAPPORTO“INNOVAZIONE DI SISTEMA” Analisi comparata del potenziale innovativo dei principali paesi industrializzati paper 2002