Conflicts and Sustainable Planning: Peculiar Instances Coming from Val D'agri Structural Inter-municipal Plan

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Abstract This paper examines experiences coming from the process of Inter-Municipal Structural Plan focussing on the evidences coming from conflicts assessment among major stakeholders' groups compared with the strategic development framework which represents the core of the plan. The composition of these conflicts makes the case study an example of the complexity challenge that we faced through a rational planning approach. Conflicts as factors of liquid society: we link our research in planning disciplines to this social debate because when we identified conflicts among stakeholders and social groups in a territory demanding for planning and more effective governance, we assume these factors as an indicator of the liquefaction of local community bringing to the instability of agreements among the components of that society. Among the proposed planning strategies, we discuss the Energy Museum project as the most characterizing context based perspective for the study area addressing the request to increase the knowledge and shared awareness on energy sector in order to enhance community awareness and reinforce social agreement in the area.

1 Introduction

This paper examines territorial organization choices defined by LISUT[1] research group in the framework of the scientific activities developed supporting the Regional Administration of the Project Val d'Agri, with reference to the design of Inter-Municipal Structural Plan (Las Casas et al. 2016, 2017). In particular, we focus on the evidences coming from conflicts assessment among major stakeholders' groups compared with the strategic development framework which represents the core of

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R. Papa et al. (eds.), *Smart Planning: Sustainability and Mobility in the Age of Change*, Green Energy and Technology,
https://doi.org/10.1007/978-3-319-77682-8_10

the plan. The planning procedure is still not closed and the results discussed in this paper are still to be discussed with local decision makers (in particular Majors and other public institutions involved in the process).

Therefore, even the presented results are not to be considered the final planning scenario, what We propose as a disciplinary contribution is the technical and methodological instances at the base of this work: accountability, systematic and independent frameworks of knowledge, sharing of uncertainty and transparency remain the basis of our research project.

Val d'Agri is a very peculiar place: a territorial context where natural and water landscapes represent structural and identity heritage and evoke a development model based on agriculture and tourism, while the presence of the biggest continental oil field in Europe, in the last decades, started an alternative industrial development model generating—of course—significant impacts.

The result is that on one hand we find people that consider hydrocarbon revenues as a chance to reverse impoverishment and economic and socio-demographic trends (characterized by depopulation and unemployment) and, on the other hand, there are ranchers, farmers and part of the scientific community that invoke at least the precautionary principle in order to compare the oil industrial development with alternatives scenarios reducing environmental impacts.

The composition of these conflicts makes the case study an example of the complexity challenge that we faced through a rational planning approach.

It corresponds with the research for the three safeguard principles that we consider as the logical basis of our proposal:

i. efficient allocation of resources
ii. equity in the distribution of opportunities
iii. protection of non-renewable resources

and it expects to test the research of an a priori rational logic, in which the connection between targets, products, activities, means, and inputs become clear through the Logical Framework Approach (LFA) implementation.

This methodology is based on an operative vision of the Faludi's "proceduralist approach" (Faludi 1987) that—besides the desired scenario—proposes a process to define and to monitor objectives and strategies and promotes synergies in order to ensure the concentration of efforts on a few well-defined directions.

The strengths of this approach are the three above-mentioned principles and the explicit sharing of objectives: this represents Popper's demarcation principle that, by following Faludi (1987) identifies what can be called "a good plan."

We consider the evidences of the disciplinary debate that since the end of the seventies, the "classical" period of the so-called *systemic approach*,[2] relevant elements of dissatisfaction about the transition from analysis to project persisted.

[2]Among the authors, besides the best known McLoughlin (1969) and Chadwick (1971), we find a very interesting reconstruction of Michel Wegener (1994), proposing a survey 10 years later Lee's article (1973).

Such transition remained predominantly linked to the optimization attempt connected to Operative Research (Friend and Jessop 1969) and to the flourishing production of simulation models (cfr. Wilson 2016).

According to our approach (Las Casas et al. 2008, 2016), the rationality of decisions about citizens' needs and aspirations and the use of common goods and non-renewable resources must be considered as a citizen's right and so a prerequisite in the development of plan proposals. An approach whose method focuses on:

- collective learning processes that feed themselves through the awareness of the interaction system complexity connected to social fabric, economy and environment[3];
- governance processes that could be applied after the definition of objectives, means and activities, logical links between the achievement of the desired scenario and available means, an adequate system of indicators measuring effectiveness and efficacy.

The references of this approach are:

- from the technical point of view, the Logical Framework Approach, included SODA, about whom we'll talk at the point 3;
- from the point of view of the normative feasibility, the GPRA (Government Performance and Result Act of 1993 of the United States) (Archibugi 2002);
- from a theoretical point of view, our main reference is Faludi (1987), whose proposal considers the transition from a static concept of planning, that adopts technical knowledge to the development of a desired future scenario, to a dynamic vision, focused on the decision as a process.

In the next section, we present the general features of the case study area: Val d'Agri. Than we discuss the "conflicts" identification coming out from territorial analysis and strategy development.

The strategic framework is described in the Chap. 4 and an example of program structure for the implementation of a specific integrated development project is proposed in the Sect. 5. Conclusions regard persistent need for new rational tools supported by robust territorial models to support planning and decision making in a context of social conflicts and "liquid society" (Bauman 2013).

2 The Implementation Context: A Synthetic Description of Strategic Sectors

The application context of this research is represented by an inner territory of Basilicata Region. Val d'Agri is a mountainous area whose settlement system is placed

[3]Cfr. the conspicuous production of Roy Benard's group with reference to what was produced in the field of understanding and modeling of decision processes. Among others, see B. Roy (1985); Ostanello and Tsoukias (1993); Las Casas (2010).

along "Agri's valley" where the S.S. 598, a road infrastructure that connects the Valley with the provinces of Potenza and Matera and Vallo di Diano, represents the backbone of the settlements.

This context consists of 23 municipalities, grouped in our development perspective into four sub-areas of specialization. It is a territory characterized by very high environmental values: approximately 50% of territory is included in the National Park of Appennino Lucano and there are about 12.300 ha of SIC areas and 5.400 ha of ZPS.

The analysis of land use shows that the most of the territory is characterized by woods, pasture lands and agricultural areas.

The area presents a lot of physical and intangible endogenous resources linked to the forms of historical villages, to agricultural techniques and products, to cultural traditions such as Lady Maria cult or arboreal rites.

The physical component of territorial heritage is widespread on the whole area. Moreover we can find unique landscapes and villages, historical and monumental riches that are not yet enhanced by a structural policy of local development.

The rural and pastoral vocation is proved by local gastronomy: Sarconi's beans, protected by IGP, Moliterno's 'Pecorino Canestrato', 'Caciocavallo podolico', Missanello's oil, cured meats, Roccanova's 'Grottino' IGT, horseradish. All of these products represent a territorial identity that connects geo-climatic features with traditional practices and knowledge. This is a structural dimension that must be considered by prospects of economic development based on innovations and on the qualification of land products.

Since the beginning of fossil energy resources exploitation, Val d'Agri has obtained an "energetic vocation" that is shown in recent regional planning documents (especially in PIEAR Basilicata).

This development dimension has not an endogenous foundation but seem to be as a strategic area of interest that can attract investments, infrastructures, job, financial resources deriving from royalties and compensation forms.

It should be underlined that the identification of environmental impacts, a consequence of industrial plants and processes, is not entirely known and it depends on monitoring systems which are planned and managed at a regional level.

Today we can say that the expectations of local communities are only partially satisfied in terms of public resources invested in requalification, in support of local production activities (including agro-zootechny), in territorial promotion. Employment represents a weakest link in terms of local development since it delays a cross growth in economic sectors different from the industrial one and the migration of people in productive age is still persisting.

The "Green Economy" can be considered as a prospect for the territorial system: public and private interventions concerning the use of plants and technologies with low environmental impact are evaluated.

Renewable Energy Sources (RES) have been adopted according to the Regional Programme Framework contained in the Regional Environmental Energy Plan (PIEAR) that considers the Valley as a Regional "Energy District".

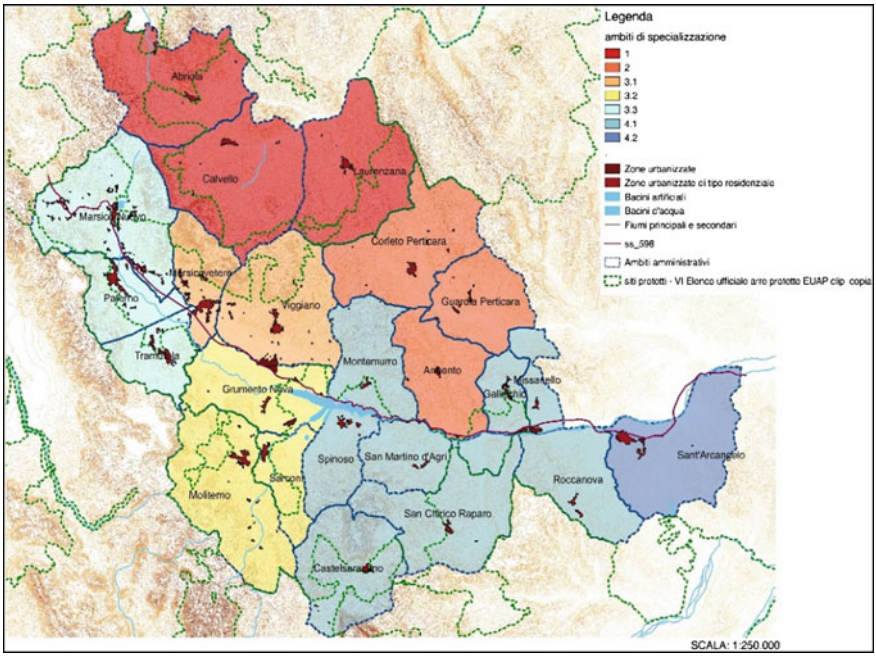

Fig. 1 Val d'Agri strategic sub-areas

Currently this forecast is not configured in terms of systemic interventions that are able to combine production processes and technological development with installations and implementations.

As regards oil, even if the discovery of oilfields dates back to the 80s, mining activities have been started during the 90s. The Oil Center of Viggiano was built in 1996 and in subsequent years an oil pipeline was devised in order to transport crude oil to the refinery of Taranto. The growth of mining activities and the hydrocarbon processing have brought several concerns about environmental safeguard, that is a precondition for all other forms of development.

There is the need to develop a knowledge framework that allows to define an important system of choices that, despite the decline of some areas (from an environmental point of view), could reinforce the defense of other areas through the strengthening of hiking, cultural and gastronomic tourism, agriculture livestock and dairy industry, small local industries that could benefit from the low cost of energy.

The following figure shows four sub-areas in which the implementation context has been divided (Fig. 1).

3 Conflicts as Evidence of Liquid Society Paradigm

Starting for Bauman (2013) position concerning Liquid Society Umberto Eco (2015) comments: *Is there a way to survive to liquidity? Yes there is. We have to realize we live in a liquid society and in order to understand it and also—hopefully—to overcame it we need new tools. The problem remains in the politic and in the most part of the intelligentsia that still not understood the extend of the phenomenon. Baumann remains a "vox clamantis in deserto"*.

We link our research in planning disciplines to this social debate because when we identified conflicts among stakeholders and social groups in a territory demanding for development and more effective governance, we assume this factor as an indicator of the liquefaction of local community bringing to the instability of agreements among the components of that society, from which depend territorial planning choices.

The experience of the PSI (Inter-municipal Structural Plan) of the Val d'Agri (Las Casas et al. 2016, 2017) has offered us the opportunity to verify how the conflicts' overlap are related to the most dramatic problem: the conflict between nature conservation and industrial activities characterized by significant emissions and dramatic socio-economic effects. In the case of Agri Valley, it is possible to describe a high level of complexity in conflicts overlapping among the groups of actors, among individuals inside each group and, finally, any individual incoherence. Probably in this complex structure of conflicts lies the complexity that, according to Herbert Simon (1982), limits the possibility of knowledge about the planning context and imposes limitations to plan rationality (Fig. 2).

The conflicts examined in the case of the Val d'Agri can be identified on two levels: those emerging between "codifiable" groups—that is to say those categories of decision makers interacting within plan decision making process; and internal conflicts to those macro groups marking of disaggregated social tissue (i.e. "liquidity"). This happens due to the absence of appropriate means of knowledge on sensitive issues: pollution, health risks, loss of identity resources, a persistent disadvantage of opportunities for residents (in terms of work, services, infrastructures) in front of a territory facing an "announced disaster".

Our disciplinary position is based on the statement that the new tools, referred by Eco (2015), are those of a renewed approach to the plan rationality in order to reduce the impact of the lack of knowledge that determines the limits of rationality according to Simon (1972, 1982).

To answer Eco's questions, in our experience of PSI development we experimented two operational levels:

- Anti-fragile strategies to be confronted with communities;
- Procedures that clarify an implementation accompanied by monitoring of transformations (tactics).

This approach (Las Casas 1995) is based on the application of the following three principles, as a solid anchor point for the identification process of the hierarchical structure of problems based on a cause-effect relation and the consequent formulation of a hierarchical structure of the objectives (we call it "Program Structure").

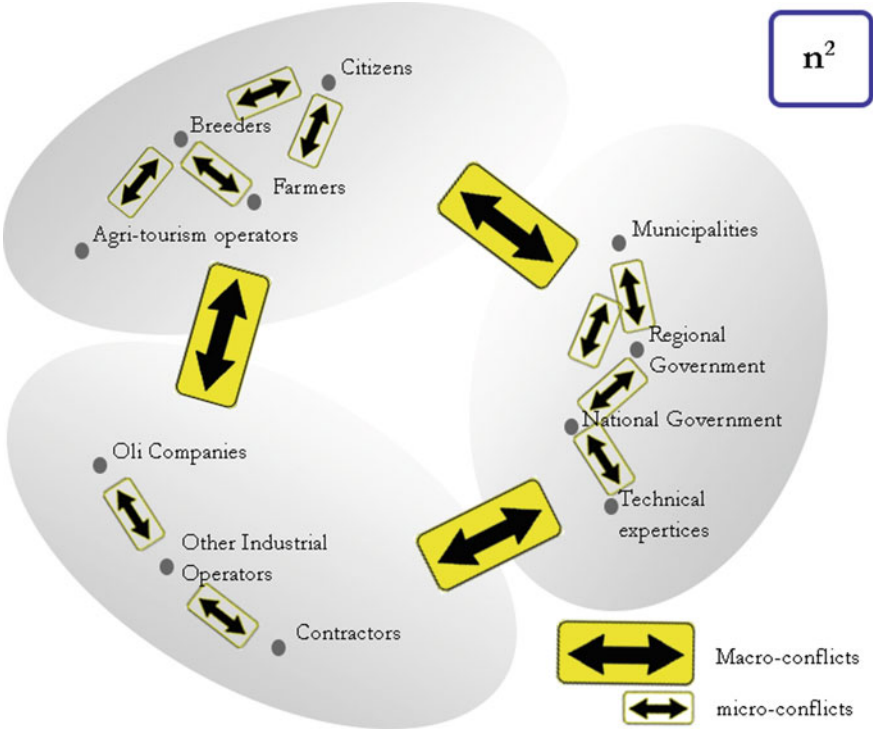

Fig. 2 Conflicts between groups and actors—The Val d'Agri case (*Source* Las Casas and Scorza 2017)

Following A. Faludi (1985, 1987), in fact, the question arises whether the problem is identified before of the objective according with the assumption that "the problem is what is meant to achieve an objective and the objective exists in order to remove the problem" and the answer was given by the three planning principles (Las Casas et al. 2018):

- equity;
- efficacy;
- un-reproducible resource conservation.

Their acceptance is given as universal as they correspond to the essence of the social contract that would ensure the cohabitation of members of a community. The constitutions of many countries rest on them. So, in applying these basic principles we affirm that in all that cases in which one or more of these principles are un-respected "problems" emerge, and to remove those problems is aimed objectives elicitation and planning strategies.

It seems that the need for planning secure territory represents a statement of aggregative intentions that arise with the natural disasters increase, international agreements, widespread literature.

In our view, it clearly appears that Bauman's liquefaction is precisely about tampering with these principles in favor of searching for the prevalence of an individual over another. Consequently, any strategy could be usefully be proposed in the field of public decision, without defending the application of those fundamental principles.

In addition, the acceptance of the three principles determines in every case another level of complexity: the need to manage competing principles such as equity vs effectiveness and ending with creating further conflict between ethics and individual or group interests.

It imposes a reflection on the disciplinary renewal of planning in order to face an operative and working role that oscillates between two opposite dimension: idealism and compromise bending to the interests of emerging powers leading to the negation of the plan.[4]

4 Dramatic Dilemma: Protection or Exploitation?

It seems to be evident that the dramatic point around which the decision-making process is tangled up is the connection among protection issues, exploitation and endogenous development of territory.

In the case of Val d'Agri, this aspect concerns research, extraction, transportation, processing of hydrocarbons and their link with natural and agricultural system.

We recorded the highest levels of uncertainty on which the debate, or better the dispute, became livelier about this key topic. These regard:

- objective, updated and forecasting data on the location and extent of activities;
- impacts on the air;
- effects on surface and underground hydrology system;
- effects on the quality of water transported by water schemes or reintroduced into surface water bodies;
- impacts on inhabitants' health;
- the allocation of revenues;
- future of the area after the depletion of deposits;
- direct and indirect impacts on employment, for activities related to hydrocarbon processing but also for agriculture and tourism;
- desires of a population that leaves the valley with a dramatic trend and achieves aging rates which, for some centres, do not foretell the permanence of inhabitants in the near future.

As for these and other problems, we cannot ask the question in a radical way: yes oil/no oil. Conversely, we have to attempt the research of appropriate context or place-based compromises, based on the sharing of information and uncertainty.

[4]The cases of decisions that in the name of acquired rights, or the need to cover public debts, or to accomplish instances of flexibility are available to introduce variants of the plan which, in fact, deny its robustness.

Only through awareness and sharing of uncertainty sources, debate and negotiation can develop a process whose main product is information. Financial resources from oil production could support such difficult research even if the total amount is not fully predictable for the future.

The proposed *vision* is based on the hypothesis of an area where the cultivation of oil fields and subsequent processes can coexist with the preservation of the most important share of natural features and the reinforcement of traditional activities and other innovations connected with local peculiarity.

We propose in fact a territory where the main mountain crests that enclose the valley and more internal ones, that include the greater and more significant natural areas, crown a valley where, conversely, the oil centre, pipelines and other innovative activities are dominant.

The hydrological system of the highest quotas will be protected and subject to monitoring procedures and aquifers will have to be effectively defended. The water collected in Pertusillo reservoir will be conveyed in a suitable pre-treatment plant before being introduced into the aqueduct.

Above all the idea to explore, produce and process oil in Val d'Agri must correspond to the exclusion of all other specified locations, avoiding the dissemination of plants without limits whose negative impact to land degradation has proved to be very serious.

The price paid in terms of environment is certainly high and it will be balanced by a development through which the activities of the valley may be partially sacrificed to the inevitable impacts (but not only those) derived from the exploitation of hydrocarbons.

Therefore, the measures of prevention, mitigation and precaution will be precondition for the reinforcement of an image, only dreamed nowadays, in which the weakest economic asset based on niche products, such as certified productions, or on the highly sensitive landscape natural elements and cultural heritage can be exploited through an integrated offer that links hiking, culture, food and wine to proposals such as the widespread museum of energy, widespread welcome and for the elderly (Table 1; Fig. 3).

5 "Energy Museum" Project

Among the proposed strategies, the one that characterizes the development perspective of the study area and which addresses the request to increase the knowledge and shared awareness on the underway processes in the energy sector is the "Energy Museum".

The project intends to integrate the conspicuous cultural heritage and environmental heritage through a system enhancing the knowledge dissemination of the historical relationship between man, the environment and energy, including future scenario. It is also oriented to link the undeniable sacrifices in environment to concrete prospects of replacing fossil fuel energy with clean energies, promoting a wide use

Table 1 Strategic functions and types of intervention

Function	Typology				
	a	b	c	d	e
Nature tourism	Walking tours	Horse	Cycle tourism	Environmental education	Equipment
Cultural and religious tourism	Museum	Fruition of energy museum	Festivals	Religious celebrations	Libraries and homeland history
Tourist accommodation	Hotel	B&B	Farmhouse		
Health and old age	Senior housing	Health Aid			
Recovery and re-use for residences and services	Recovery and re-use for Leisure and socialization	Recovery and re-use for culture, entertainment and training	Education in the field of recovery and re-use and energy efficiency		
District/energy museum	Oil refining and monitoring	Energy history and economy	Technological park and innovative R.E.S. systems	The water mills	
Industry	Energy production	Electrochemistry	Metallurgy	Electronics	
Agro-Zootechnics	IGP bean	Ovine slaughter, preserves and dairy products	Podolica slaughter, preserves and dairy products	Restaurants	Logistics
Network: energy, water supply, transport and communications	Freight transport	Purifiers and water schemes	ICT for people transport	Organization LPT	Connection with tourist demand

of the economic resources deriving from the extraction of hydrocarbons (royalties) in research and large scale RES (renewable Energy Sources) experiments considered as a relevant compensation form.

To this end, the museum will exhibit the technologies, showing their evolution and the evolution of the relationship with the daily life of man, with the economy and with the environment.

Following the well-known examples of the “territorial museums”, it is a widespread museum that consists of some exhibition nodes and examples of techno-

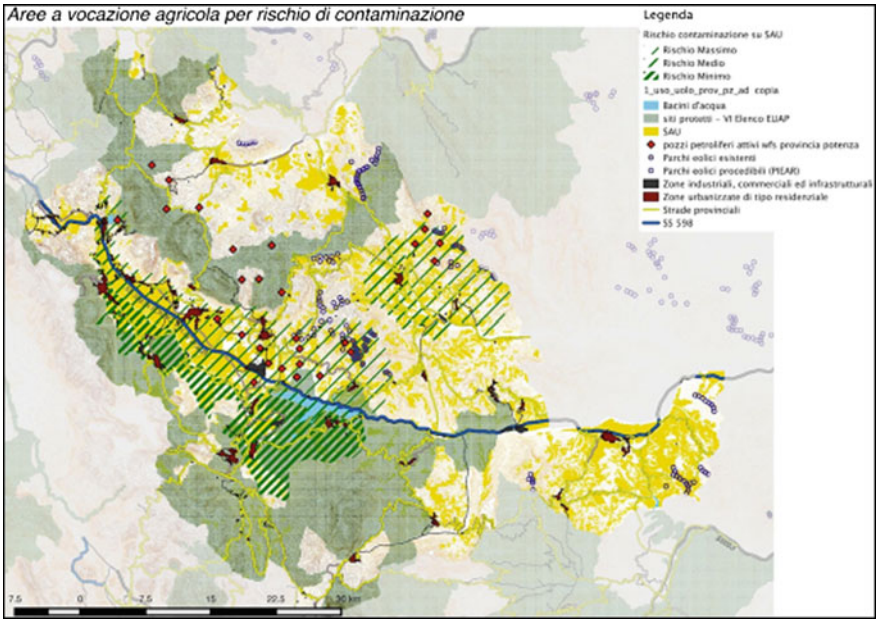

Fig. 3 Agricultural land per contamination risk

logical plants and will propose itineraries that represent a form of integrated tourist supply.

Key elements of the "Energy Museum" project are the energy plants on the territory, in particular those related to the oil extraction process as well as those related to energy production from renewable sources, intangible studies, research and experimentation, examples of innovation and experimental facilities and training/information activities aimed at local communities and visitors.

It is a project aimed at generating repercussions in terms of awareness of the processes underway from an environmental and social standpoint, assessments regarding specific conflicts, in-depth studies and research projects geared towards sustainable development, mitigation of environmental and human risks, to the formulation of strategies to safeguard and enhance the identity of characters within a process of exploitation of fossil resources.

The objectives concern actions from which local communities will benefit [O1]. Such actions are aimed at an understanding and awareness of the processes underway in the energy sector, accompanied by the establishment of a center of expertise [O2] aimed at the rigorous study of phenomena and the screening of territorial development scenarios. Suitable mean is the implementation of inter-institutional, interregional and transnational projects that involve local research and excellence centers. These transversal activities are enriched through the implementation of exploitation processes for the Widespread Energy Technology Park [O3] which includes the traditional forms of fossil resources' exploitation, the most recent ones linked to RES

and innovative energy efficiency projects to be supported and disseminated on the territory.

The identity link between local traditions and future scenarios is represented by the network of old mills distributed throughout the territory. These artifacts—to be cataloged, redeveloped and refurbished according to the precise needs of the implementation of the "Museum of Energy" project—represent architectural historical emergencies and nodes of the territorial development schema [O4].

In this activity, the role of the Local Administrations will be of highly relevant. For each of the specific objectives and themes, it will set up an institutional discussion group aimed at meeting and seeking synergies and integration by proposers and actors involved ensuring the dissemination of results and the wider involvement of local communities also through innovative online tools.

Furthermore, this project intends to create a cooperation between the various research actors that operate or can operate in the region, with the dual purpose of achieving the dissemination of knowledge initiatives and to deepen the scientific aspects of monitoring and innovation.

This role and cooperative approach between the institutions is a precondition for the realization of the "Museum of Energy" project and, at the same time, an expected outcome.

6 Conclusions

The implementation of this renewed approach to plan rationality can take place on two levels:

- *"a tavolino" (on the desk)* it means as a theoretical exercise of planning developed in a technical dimension avoiding the debate with decision makers and relevant stakeholder comparing different steps of the program structure with appropriate MOVs
- on the field i.e. developing appropriate participation (Table 2; Fig. 4).

In the first case uncertainty remains, while working on field and so: accepted the ethical principle of sharing uncertainty and in accordance with the most recent international guides (UN Habitat 2015, 2016, 2017), comes out the usefulness of promoting participation.

Table 2 Energy museum program structure and M.O.V.

Energy museum program structure	
Overall objective	To disseminate knowledge of technologies and their relationship with man and the environment and to promote RES
Specific objectives	O1 Valorisation of knowledge about oil exploitation and treatment processes and environmental monitoring
	O2 Disseminate knowledge of the history of energy and its contribution to the economy
	O3 Valorization of the widespread technological park and experimentations of innovative R.E.S.
	O4 Knowledge enhancement of water mills and integration in the tourist offer system
Products	P 1.1. Spaces and equipment for reception and exposure
	P 1.2. Multimedia dissemination programs in the history of energy
	P 1.3. Short dissemination courses
	P 2.1. Study and project center
	P 2.2. Collections of ancient technological equipment
	P 3.1. Best practices: itineraries and guides
	P 3.2. Realization of innovative and demonstration plants
	P 3.2. Spaces and equipment for reception and exposure
	P 4.1. Routes of the mills equipped for the visit
	P 4.2. Mills and artifacts recovered

Participation represents a necessary condition for urban and territorial governance in a creative direction but should be extended beyond the only stakeholders that traditionally have the possibility to decide. It has to include the other groups that traditionally remain the "object" of the decisions.[5] Of course, it should include an extensive use of suitable knowledge-structuring tools as in Las Casas and Scorza (2016).

Since the Sixties[6], participation has been seen as a conquest of democracy and has resulted in the spread of assemblies, neglecting the effect, far more productive, which could be produced by a synergy of brains.

[5] In french: "Les agis" (B. Roy 1985)

[6] (cfr. Davidoff 1965; Friedmann 1987)

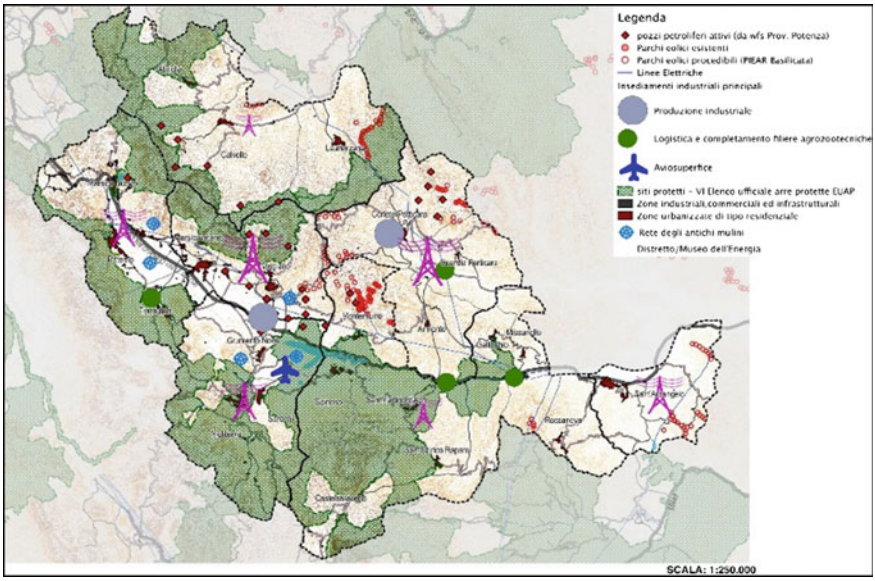

Fig. 4 Energy museum project

Now, if participation is certainly a conquest of democracy, it must also be taken into account that participation is a precondition for the development of a collective learning process which is at the basis of a decision-making process that invests the public sphere.[7]

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[7] "*participation and participatory process remain a central element of modern society, representing a prerequisite and a democratic right in Western nations. However, although their importance is underlined at the international level, the participatory practices has resulted in some criticism and problematic aspects due to the ambivalent nature and concept of participation. …. Governments, some times, implement inclusive procedure in order to reinforce the existing power relations…*". Leone e Zoppi (2016)

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