

# TeMA

Journal of  
Land Use, Mobility and Environment

This special issue collects a selection of peer-review papers presented at the 8th International Conference INPUT 2014 titled "Smart City: planning for energy, transportation and sustainability of urban systems", held on 4-6 June in Naples, Italy. The issue includes recent developments on the theme of relationship between innovation and city management and planning.

Tema is the Journal of Land use, Mobility and Environment and offers papers with a unified approach to planning and mobility. TeMA Journal has also received the Sparc Europe Seal of Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ).

# INPUT 2014

papers selected

## Smart City

planning for energy, transportation  
and sustainability of the urban system

## SMART CITY

## PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

Special Issue, June 2014

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# TeMA

Journal of  
Land Use, Mobility and  
Environment

TeMA. Journal of Land Use, Mobility and Environment offers researches, applications and contributions with a unified approach to planning and mobility and publishes original inter-disciplinary papers on the interaction of transport, land use and environment. Domains include engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science, and complex systems.

The Italian National Agency for the Evaluation of Universities and Research Institutes (ANVUR) classified TeMA as scientific journals in the Areas 08. TeMA has also received the Sparc Europe Seal for Open Access Journals released by Scholarly Publishing and Academic Resources Coalition (SPARC Europe) and the Directory of Open Access Journals (DOAJ). TeMA is published under a Creative Commons Attribution 3.0 License and is blind peer reviewed at least by two referees selected among high-profile scientists by their competences. TeMA has been published since 2007 and is indexed in the main bibliographical databases and it is present in the catalogues of hundreds of academic and research libraries worldwide.

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# TeMA

Journal of  
Land Use, Mobility and  
Environment

This special issue of TeMA collects the papers presented at the 8th International Conference INPUT 2014 which will take place in Naples from 4th to 6th June. The Conference focuses on one of the central topics within the urban studies debate and combines, in a new perspective, researches concerning the relationship between innovation and management of city changing.



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## EIGHTH INTERNATIONAL CONFERENCE INPUT 2014

### SMART CITY. PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

This special issue of TeMA collects the papers presented at the Eighth International Conference INPUT, 2014, titled "Smart City. Planning for energy, transportation and sustainability of the urban system" that takes place in Naples from 4 to 6 of June 2014.

INPUT (Innovation in Urban Planning and Territorial) consists of an informal group/network of academic researchers Italians and foreigners working in several areas related to urban and territorial planning. Starting from the first conference, held in Venice in 1999, INPUT has represented an opportunity to reflect on the use of Information and Communication Technologies (ICTs) as key planning support tools. The theme of the eighth conference focuses on one of the most topical debate of urban studies that combines , in a new perspective, researches concerning the relationship between innovation (technological, methodological, of process etc..) and the management of the changes of the city. The Smart City is also currently the most investigated subject by TeMA that with this number is intended to provide a broad overview of the research activities currently in place in Italy and a number of European countries. Naples, with its tradition of studies in this particular research field, represents the best place to review progress on what is being done and try to identify some structural elements of a planning approach.

Furthermore the conference has represented the ideal space of mind comparison and ideas exchanging about a number of topics like: planning support systems, models to geo-design, qualitative cognitive models and formal ontologies, smart mobility and urban transport, Visualization and spatial perception in urban planning innovative processes for urban regeneration, smart city and smart citizen, the Smart Energy Master project, urban entropy and evaluation in urban planning, etc..

The conference INPUT Naples 2014 were sent 84 papers, through a computerized procedure using the website [www.input2014.it](http://www.input2014.it) . The papers were subjected to a series of monitoring and control operations. The first fundamental phase saw the submission of the papers to reviewers. To enable a blind procedure the papers have been checked in advance, in order to eliminate any reference to the authors. The review was carried out on a form set up by the local scientific committee. The review forms received were sent to the authors who have adapted the papers, in a more or less extensive way, on the base of the received comments. At this point (third stage), the new version of the paper was subjected to control for to standardize the content to the layout required for the publication within TeMA. In parallel, the Local Scientific Committee, along with the Editorial Board of the magazine, has provided to the technical operation on the site TeMA (insertion of data for the indexing and insertion of pdf version of the papers). In the light of the time's shortness and of the high number of contributions the Local Scientific Committee decided to publish the papers by applying some simplifies compared with the normal procedures used by TeMA. Specifically:

- Each paper was equipped with cover, TeMA Editorial Advisory Board, INPUT Scientific Committee, introductory page of INPUT 2014 and summary;
- Summary and sorting of the papers are in alphabetical order, based on the surname of the first author;
- Each paper is indexed with own DOI codex which can be found in the electronic version on TeMA website ([www.tema.unina.it](http://www.tema.unina.it)). The codex is not present on the pdf version of the papers.

## SMART CITY

## PLANNING FOR ENERGY, TRANSPORTATION AND SUSTAINABILITY OF THE URBAN SYSTEM

Special Issue, June 2014

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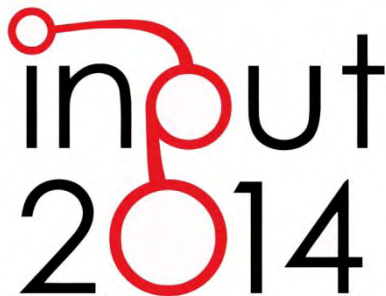
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*Naples, 4-6 June 2014*

The logo for the INPUT 2014 conference. It features the word 'input' in a lowercase, sans-serif font, with the 'i' and 'n' connected by a red line that forms a stylized shape. Below 'input' is the year '2014' in a larger, bold, sans-serif font. The '0' in '2014' is also connected to the red line above it.

## OPEN DATA FOR TERRITORIAL SPECIALIZATION ASSESSMENT

TERRITORIAL SPECIALIZATION IN ATTRACTING LOCAL  
DEVELOPMENT FUNDS: AN ASSESSMENT PROCEDURE BASED  
ON OPEN DATA AND OPEN TOOLS

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### ABSTRACT

The New Cohesion Policy opens to an integrated place-based approach for the improvement of territorial and social cohesion. The issue of territorial impact assessment of regional development policies highlight that data availability, open access to datasets in "near real-time", participation, knowledge sharing, assumed importance within the development planning process.

The contribution of 'open data' appears to be mature and in this paper we present an application of spatial analysis techniques for the evaluation of spatial effects of EU funds starting from open data by open-coesione.

The application regards an internal areas of Basilicata Region: the Agri Valley. A complex contests in which an environmental and agricultural traditional vocation conflicts with a recent development of oil extraction industries.

Conclusions regard further applications and perspectives for improving and supporting regional development planning considering the exploitation of open data sources and spatial analysis.

### KEYWORDS

Territorial specialization, New Cohesion Policy, Regional Development, Impact assessment, Open Data, Open-Cohesion

## 1 INTRODUCTION

The New Cohesion Policy, developed in the context of Europe 2020 agenda, opens to an integrated place-based approach for the improvement of territorial and social cohesion. Smart growth, sustainable growth and inclusive growth for EU 2020 represent overall goals to be achieved under the comprehensive approach defined by Barca (2009) as 'place based approach'. As the authors already discussed (Las Casas and Scorza 2009) concerning the issue of territorial impact assessment of regional development policies, the relevant instance comes from knowledge management in regional programming practice. It means data availability, open access to datasets in "near real-time"<sup>1</sup>, participation, knowledge sharing, key actors effective involvement in planning process.

The "concentration" issue coming from EU 2020 Cohesion Policy still reflects ambiguity in interpretation (cfr. Capello 2014) and not structured implementation in Regional Programs. From a "thematic concentration" to a "spatial concentration", several attempt are going to be developed in an uncertainty framework.

If a "thematic concentration" reflects more a traditional approach considering a panel of main objectives and goal, it could represents an affective procedure if a proper context analysis identified ex-ante specific needs and priorities coming from local specializations and local communities needs (in other words "place based"). A "spatial-concentration" should produce a map of cohesion programming based on clear and informed decisions expressing the awareness of 'where' to invest in order to maximize the effects of cohesion policies. There is not a ex-ante solution in order to ensure the achievement of regional development results but a balance between a thematic generalization of objectives and a concrete spatial awareness of development precondition should be investigated,

A relevant information should come from lesson learned in previous programming experiences.

The contribution of 'open data' to the impact assessment of EU Operative Programs appears to be mature in concept but still week in accuracy of available data bases. We used for the research data from the project 'opencoesione' by Italian Ministry for Territorial Cohesion. The Italian Ministry engaged with this unstoppable process of collecting and sharing data for improving citizens commitment on public policies. It developed a web service distributing data on investments policies developed by National and Regional Operative Programs 2007/2013 matching together data from regional and national administrations. The results are analysed in the paragraph number four of the paper with the application of spatial analysis techniques for the evaluation of spatial effects.

In this paper, after a short framework review of New Cohesion Policy issues, we describe a process of territorial impact assessment of Regional Operative Programs investments oriented to the analysis of territorial specialization in attracting funds. The process is completely based on Open Data analysis through Open Tools (software and web services) in order to demonstrate that the integration of such resources overcomes the dependence from proprietary data formats and proprietary software towards interoperability and open information.

The application regards an internal areas of Basilicata Region: the Agri Valley. A complex contests in which an environmental and agricultural traditional vocation conflicts with a recent development of oil extraction industries.

Conclusions regards possible application and perspectives for improving and supporting regional development planning considering the exploitation of open data sources and spatial analysis.

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<sup>1</sup> We refer to the effectiveness of a 'policy monitoring system' providing data concerning regional programs implementation according to the current status. Today, in the information explosion era it is more useful an ongoing datasets tuned with the actual implementation status of a program, instead of a final and checked dataset provided years after the closure of a program.



## 2 NEW COHESION POLICY: A SYNTHETIC FRAMEWORK

EU cohesion policies include different areas of intervention and generally are carried out in order to promote the principle of redistributing opportunities among European regions and territories. It is the largest area of expenditure for European Union and it is possible to affirm that policy analysis tends to overlook the evaluation stage of such complex strategies while a proper assessment practice (Hoerner *et al.* 2012).

The EU Cohesion Policy is actually interpreted as the main tool in order to achieve the Europe 2020 target addressing a wide range of EU economic, environmental and social objectives. It represents a driven tool toward a new concept of Europe with smart, sustainable and inclusive growth. It currently offers both examples of significant economic and environmental “win-wins” and of “tradeoffs” that fail to offer net added value.

The reform of cohesion approach can be highlighted in two main concept areas including a wide spread of arguments and objectives:

- Investment choices: “where to spend more, where to spend less”
- Investment better - via improved Cohesion Policy governance and tools

The two key EU reference strategies for the next decades are defined by ‘Europe 2020’ & the Territorial Agenda (TA) 2020.

‘Europe 2020’ is aimed at providing more jobs and better lives ‘by stimulating smart, sustainable and inclusive growth’ over the coming decade. It involves EU Member States to integrate efforts related to socio-economic development through greater coordination of national and European policies. This strategy was approved by the European Council in June 2010 after three months of elaboration and consultation.

The TA 2020 also puts forward an ambitious strategy, though applying specifically here to EU territorial development. Although this document is also designed for a very wide audience, it has received a lower level of public recognition than ‘Europe 2020’ strategy. This probably stems from its elaboration process, which was essentially intergovernmental in nature, i.e. a collaboration between the national authorities responsible for spatial planning and territorial development in the EU. The TA 2020 has not been formally adopted by any EU body. TA 2020 was adopted in May 2011 at the informal ministerial meeting.

‘Europe 2020’ and the TA 2020 thus originate from different political processes, and have a different political status, but the aim is to reinforce each other integrating territorial development and inclusion.

The ‘Europe 2020’ strategy is mainly focussed on economic development, in particular the recovery from the 2008 financial crisis and the strengthening of the development opportunities in the EU. ‘Europe 2020’ has replaced the Lisbon strategy. It puts forward three mutually reinforcing priorities:

1. Smart growth: developing an economy based on knowledge and innovation.
2. Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
3. Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

The TA 2020 is the action-oriented policy framework of the ministers responsible for spatial planning and territorial development in support of territorial cohesion in Europe. It aims to provide strategic orientations for territorial development, fostering integration of the territorial dimension within different policies across all governance levels while overseeing implementation of the ‘Europe 2020’ strategy in accordance with the principles of territorial cohesion.

Six main territorial priorities for the development of the EU have been set out in the TA 2020:

1. Promoting polycentric and balanced territorial development as an important precondition of territorial cohesion and a strong factor in territorial competitiveness.

2. Encouraging integrated development in cities, rural and specific regions to foster synergies and better exploit local territorial assets.
3. Territorial integration in cross-border and transnational functional regions as a key factor in global competition facilitating better utilisation of development potentials and the protection of the natural environment
4. Ensuring global competitiveness of the regions based on strong local economies as a key factor in global competition preventing the drain of human capital and reducing vulnerability to external development shocks
5. Improving territorial connectivity for individuals, communities and enterprises as an important precondition of territorial cohesion (e.g. services of general interest); a strong factor for territorial competitiveness and an essential condition for sustainable development
6. Managing and connecting ecological, landscape and cultural values of regions, including joint risk management as an essential condition for long term sustainable development

In the figure below IEEP (2011) summarized the relationships between economic and environmental outcomes from policy interventions and investments in a win-loss diagram.

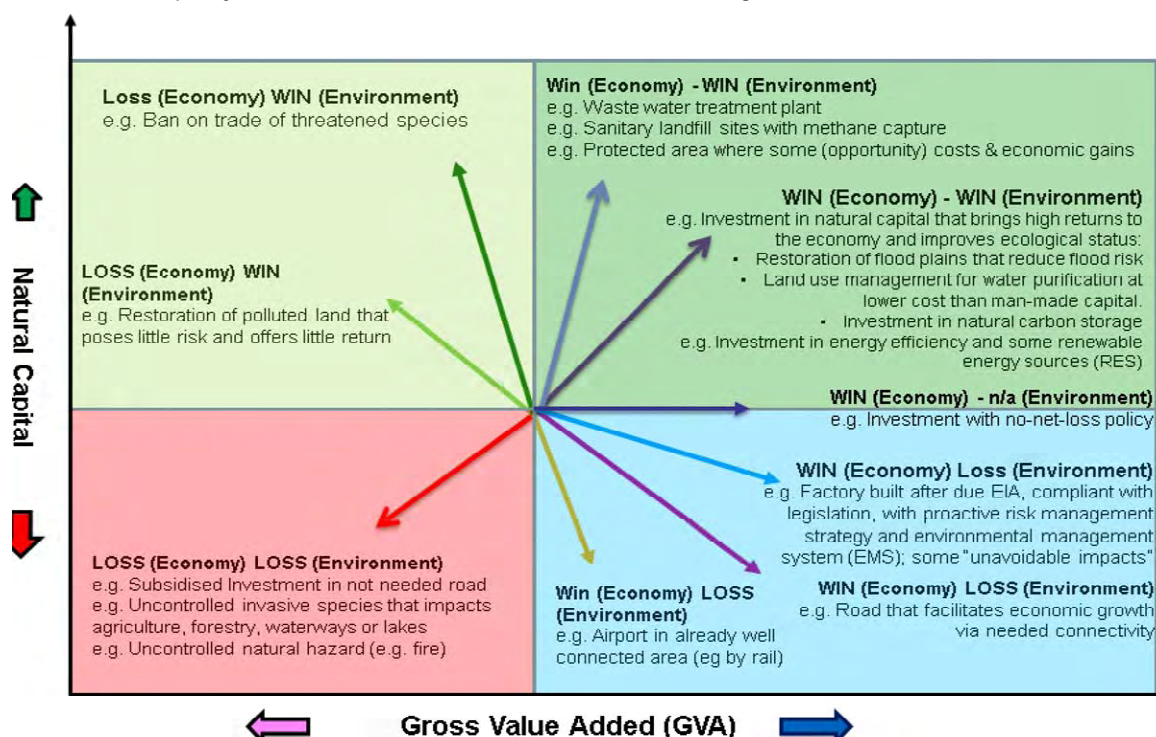


Fig. 1 Relationships between economic and environmental outcomes from policy interventions and investments (IEEP 2011)

This complex policy framework is based on the key objective of "achieving greater economic and social cohesion in the European regions". Anyway some critical consequences could be derived from the point of view of convergence process for lagged regions: the imbalance between regional objectives and financial resources; the existence of serious difficulties for complying with earmarking; and the unknown effects of other policies on regional convergence (Mancha-Navarro 2008).

### 3 STRATEGIC 'PLACE' CONCENTRATION

The principle of concentration is widely stressed within New Cohesion Policy framework.

The concentration of EU efforts is contra-posed to the indiscriminate distribution of funding ('raining models'). This interpretation could intend that investment promoted by Regional Operative Programs (ROPs) should be focused on specific and circumscribed instances generating effective local development processes. We are in the case of redistributing investment effectiveness and positive outcomes on local communities, instead of realizing a well balanced €/citizen rate within a region.

This synthetic and not exhaustive remark allows us to highlight two relevant aspects of concentration principle: the concentration on objectives and the territorial concentration of investments. If the first appears to be not so far from traditional behavior of managing EU cohesion policies, the second level looks more at the 'place based' approach and expresses the importance of selecting territorial specification.

Where agriculture and farmers can generate cohesion by the means of investments and funding from ROPs?  
Where SMEs can generate a competitive cluster in EU production framework?

These questions change the interpretation pattern on the evaluation of ROPs effects and objectives.

We consider program evaluation as a cyclic process including techniques, judgments and contribution to forming program decisions. This view leads to the integration of program/project cycle to the evaluation cycle.

To the procedural concept through which decisions are taken binds, as a consequence, the concept of evaluation as a process closely linked to the project cycle (Las Casas 1984). It is reductive to solve the problems of evaluation by the application of a techniques set related to limited issues.

In the "evaluation cycle" (Lombardo 1995) it is possible to identify three types of evaluation each connected to one or another phase of the project cycle.

These types are:

- the evaluation of the state of the art;
- the benchmarking evaluation of strategies, plans or alternative projects;
- the achieved results evaluation.

The evaluation cycle is entitled to respond to the questions that arise at each stage of the project cycle and in particular:

- the assessment of the state of the art is closely related to the formulation of the "raison d'etre" and purpose of the project;
- the assessment of the pre-feasibility of the project highlights the need to put an assumption on the occurrence of conditions not dependent on the project so that the expected benefits can be achieved;
- the feasibility assessments leads to the definition of costs and expected benefits from the project, it identifies the sources of greatest concern dependent on various components of the work and it limits the field of choices;
- the benchmarking evaluation, between different intervention alternatives, leads to the choice to intervene and what changes have to be made to the project;
- the evaluation of the state of the art of the project defines whether to continue the project and what corrective should be provided;
- the final evaluation (and the ex-post evaluation) determines whether the assumptions made ex-ante were reliable and permits do decide if the experience can be repeated.

Connected to the interpretation depending on evaluation approach to local development processes, appeared the thesis of "renationalization" of cohesion policies (Las Casas and Scorza 2008). This approach reinforced the role of national administration in driving the implementation of ROPs at regional ad local level. While the negotiation of Member States at the top level of Cohesion Policy hierarchy was previously considered the primary role of National Authorities, now the importance is mainly focussed on the

implementation phase. This idea fits more with the 'place based' approach in terms of local specific needs interpretation. We intend that managing authorities and public administrations generate a progressive perception of territorial capacity and/or territorial needs under the program structure of ROPs. This process of reinforcing territorial knowledge includes tools and procedure of analysis in order to define the spatial specification of ROPs.

Data availability is at the base of such process and data sources comes from different organizations entitled of ROPs management.

In following section we describe the use of an open data service provided by Italian Ministry for Territorial Cohesion. The project 'opencoessione'<sup>2</sup> collected and distributed data on Operative Programs implementation in Italy for the programming period 2007/2013.

#### 4 OPEN DATA FOR EFFECTIVE SPATIAL EVALUATION OF COHESION POLICIES

Today data availability is not the main problem in territorial investigation but new instances emerged in terms of data management, certification and standard exchange protocols (Scorza 2013). Many people and organizations collect a wide range of different data in order to perform their own tasks.

The Open data, and in particular 'open government data', are an huge resource still largely untapped. The Government role is particularly important in this sense, not only for the quantity and the centrality of the data collected, but also because most of the government data are public by law, and therefore should be made open and available for anyone to use.

According to the Open Knowledge Foundation Italia (OKFI 2013) there are many circumstances in which we can expect that the open data have significant value. There are also several categories of individuals and organizations that can benefit from the availability of open data, including public administration. At the same time it is not possible to predict how and where value is created.

We can identify a large number of areas where public open data contribute to create value for user knowledge building and participation, among them:

- Transparency and democratic control
- Participation and increasing influence in the public discussion
- Improvement or creation of products and services for private sector
- Innovation and R&D
- Improving the efficiency of public services
- Improving the effectiveness of public services
- Measuring the impact of public policies

We are interested in the last point of application as the extraction of new knowledge by combining different sources of data and the identification of regularities that emerge from the analysis of large masses of data represent the core of the application we propose for the evaluation of ROPs impact at local scale.

In Italy there are many initiatives opening of information assets undertaken by public central and local administrations. The portal dati.gov.it, (available since 2011) is a milestone in the process of opening a new era for innovation and transparency in the public administration.

Other most famous experienced in this route are: American Data.gov was launched by the Obama administration as a result of the Directive on Open Government in December 2009; Data.gov.uk strongly

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<sup>2</sup> <http://www.opencoessione.gov.it/>.

backed and sponsored by Tim Berners-Lee "the inventor of the World Wide Web"; Australia Data.gov.au; Canada Data.gc.ca; Norway Data.norge.no; France Data.gouv.fr; European portal beta open-data.europa.eu. Actually we can affirm that the practice of open data has been extended, but a lot of work and efforts should still be pay in order to get affective services for data integration.

The project Open Cohesion provides an open data service concerning cohesion policies effects with a orientation toward planning processes. The initiative was strongly supported by the Minister for Territorial Cohesion, which warns the urgency of a more active participation of citizens in decision-making relating to planning decisions and in the process of social vigilance on the use of collective resources.

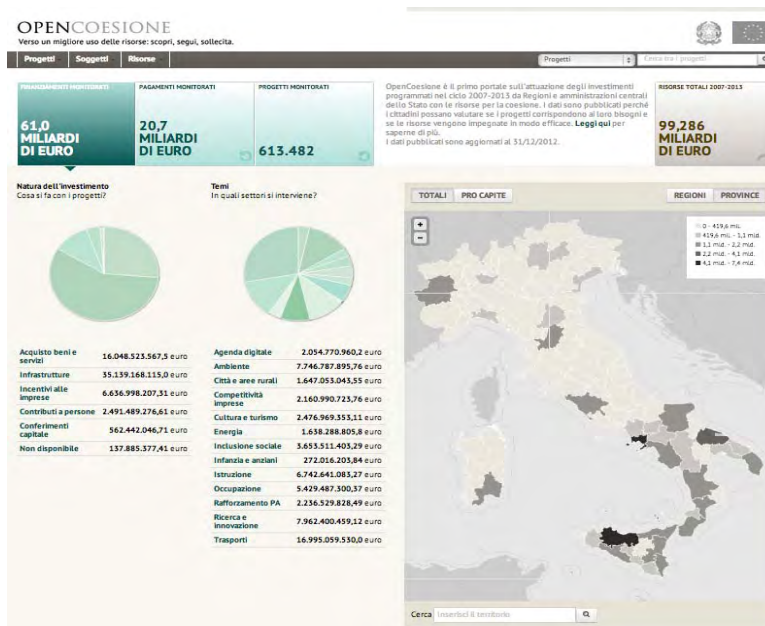


Fig. 2 Opencoessione screen shots

The publication of the data in an accessible format and reusable on their corporate websites shows the willingness of the government to move in a systematic way towards a structure of transparency that encourages the active participation of citizens and the re-use of data. The service pursues the objective of improving Citizen Engagement on investments policies, and offers a data set with specific information concerning project funded by the current programming period 2007-2013 matching implementation data from regional and national administrations entitled of Ops management.

Open-Government and Open-Data represent the two faces of the same coin.

But, to ensure that data are really "open", they has to be provided in an open and non-proprietary format, without particular restrictions of licenses, reusable and integrable, easily searchable on the web through databases, catalogs and search engines, directly accessible via Internet protocols, network-accessible in network quickly, immediately and at any time, and transmitted directly interchangeable between all users on the network. The data must also be supported by metadata and should allow the export in order to use on-line and off-line, integration, manipulation and share.

The next figure represents a classification of data "open" according to stars scoring by Tim Berners-Lee (2009). The single star is assigned to the data in "portable document format", consisting of a cast format that does not allow any manipulation without a considerable work. Two stars are assigned to data in property format, but the owner, allowed a total utilization with some interoperability problems if you are not using the specific software. The three stars are assigned to the product in non-proprietary format ("open

format”). The data are in four-star format if they follow international standards for interoperability, while the five-star data contains also link to other data provided in other contexts (“open linked data”). Concerning territorial purpose five stars open linked data includes the adoption of OCG standards.

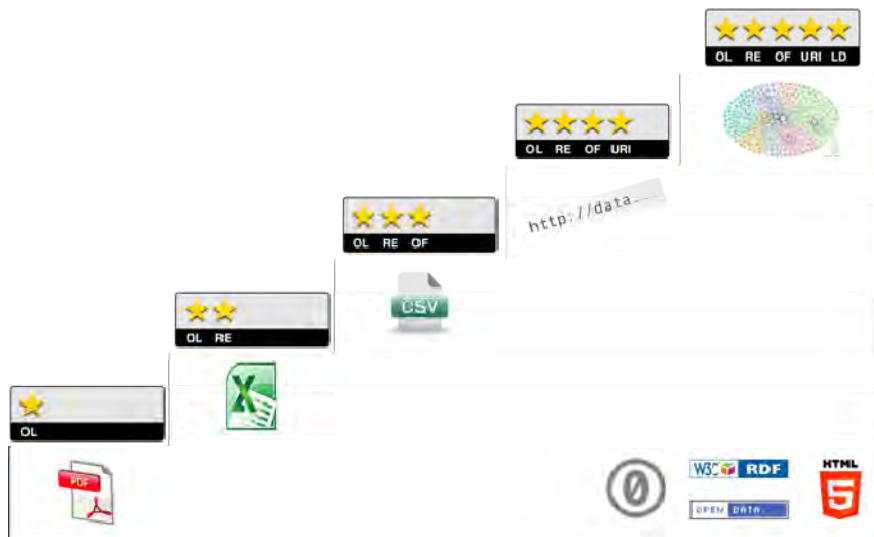


Fig. 3 Five Stars OPEN DATA from: <http://5stardata.info/>

Open Coesione appears to be a result of Open Government Approach and concerning the Tim Berners-Lee we can affirm that it provides only three stars open data with the opportunity to get spatial dimension information through external elaboration. In this direction, previous researches demonstrated the added value of providing open spatial information concerning development programs. We refer to the experience developed by PIT Marmo Platano Melandro (Basilicata – IT) during the EU programming period 2000-2006 with a web gis service for the spatialization of development policies (Murgante *et al.* 2011).

While in that experience the main effort was in territorial data production we have to affirm that today it is possible to develop accurate spatial analysis concerning the distribution of EU funded investments with public open data. In the next section we describe the adopted methodology.

## 5 TOWARD THE ELABORATION OF INVESTMENTS SPATIAL DIMENSION

The innovative element in the assessment approach we proposed depends on the punctual territorialisation of projects and interventions. It is beyond the traditional representation of the information for aggregate items and pre-defined geographical areas (administrative boundaries, areas PIT, PIOT, program areas, etc..) according to the aim of characterizing the "places of implementation."

This approach changes the perspective of the assessment because it reinforces the selection criteria on the basis of the request for territorial "specialization" in programming New Cohesion Policy.

Our approach is based on open dataset distributed according to interoperable formats, managed by open-sources software and application, with a strong relationship with web-based services.

The issue of territorial impact assessment of development policies is a domain in which different approaches produce different results that often represent solutions for a specific purpose, serving a specific process of socio-economic and territorial planning without a framework methodology validated under a scientific or technical point of view.

The developed proposal aims to provide answers to the demand for territorial specializations analysis oriented to the construction of policy choices to be developed within the EU's 2014-2020 operational planning tools. The proposed approach, based on information concerning the implementation of the instruments 2007-2013, develops a interpretation model that allows a progressive monitoring of on-going processes. A territorial monitoring system that allows at a detailed scale punctual information.

In fact, it has been developed a procedure that identifies the punctual interventions (public and private projects in different thematic areas of intervention) through a dataset of geo-referenced points on which you can develop spatial statistics, overlaying, compatibility assessments, etc..

The territorial context of the implementation is the Agri Valley. An inland area of the Basilicata Region in which coexists structural problems for the socio-economic development related to the low level of infrastructures, to a fragmented distribution of settlement and services, to a backward and uncompetitive production system. In contrast to this condition of lagging area, since the 90s a settlement in the oil extraction, relevant also at national level, has been settled (ENI 2012). These industrial activities characterized by an high environmental impact generated conflicts, including at local development programming level, compared to a traditional view of development related to the enhancement of the environmental and agricultural domains, and social expectations, in terms of the positive impact on employment and income for the local communities, not yet completely satisfied.

#### 5.1 OPEN SOURCE AND WEB-BASED TOOLS: AN INNOVATIVE PROCEDURE

In relation to the structure of the information sources we used, it has been implemented a procedure 'ad hoc' that exclusively refers to open-source tools. In this section of the paper we describe the operational steps and tools used with appropriate references to encourage the replicability of the process and results. The flow chart presented in the following figure exemplifies the process in terms of operational components. The first stage of the process includes the operation of extraction, analysis and preparation of data for the territorialisation. The datasets provided by the project Open Cohesion contain fields relating to the 'localization' of each records, it means addresses of each individual interventions funded by different programs/funds. These are attributes that can have different levels of specialization in relation to the nature of the intervention, the type of expense, with the characteristics of the proposer or the beneficiary of resources.

Generally the objective of intervention territorialisation is to get precise location of each initiatives. Therefore, we considered the field "address" in addition to "name of the City" and the "Postal Code" to generate a string "LOCATION" on which to perform an operation of geo-coding supported by the free tools by Google. Data tables, pre-processed appropriately, were uploaded within 'Google Fusion Table' . It is a web experimental application distributed within the Google applications 'Google Drive', for viewing and sharing large data tables.

The application tool allows you to:

- Show online large tables of data.
- Filter and synthesize information.
- Develop online graphs, maps, graphs or layouts.
- Management of multi-user and collaborative production date.
- Merge and cross more databases.
- Export of geographic data format (.kml) and other interoperable formats (.csv).

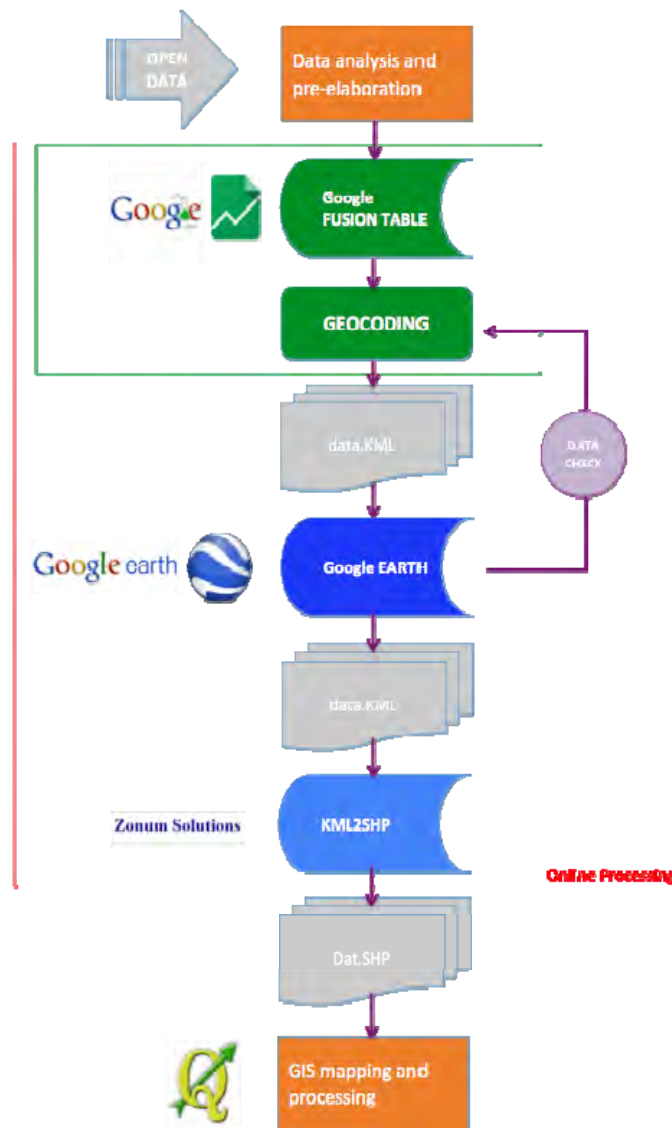


Fig. 4 Territorialization procedure flow chart

Therefore Google Fusion Table, working online, allows to perform a geo-coding on the field "location" of the table returning a map of points exported in KML format.

These files, as verified by the operator recursively in order to reduce the uncertainty in localization, after processing in Google Earth<sup>3</sup>, are exported in local .kml format and subsequently converted in .shp through an online tool distributed by Zonum Solutions<sup>4</sup>.

In this way you get data with a proper format interoperable widely in GIS application software and web-GIS. The picture below shows the investments supported by the Operational Programmes 2007/2013 falling within the Val d'Agri area. The GIS processing were carried out using the open-source software Q-GIS<sup>5</sup>.

The figures we shows the total of 551 projects localized in the study context.

<sup>3</sup> <http://www.google.it/intl/it/earth/index.html>.

<sup>4</sup> <http://www.zonums.com/online/kml2shp.php>.

<sup>5</sup> <http://www.qgis.org/it/site/>.



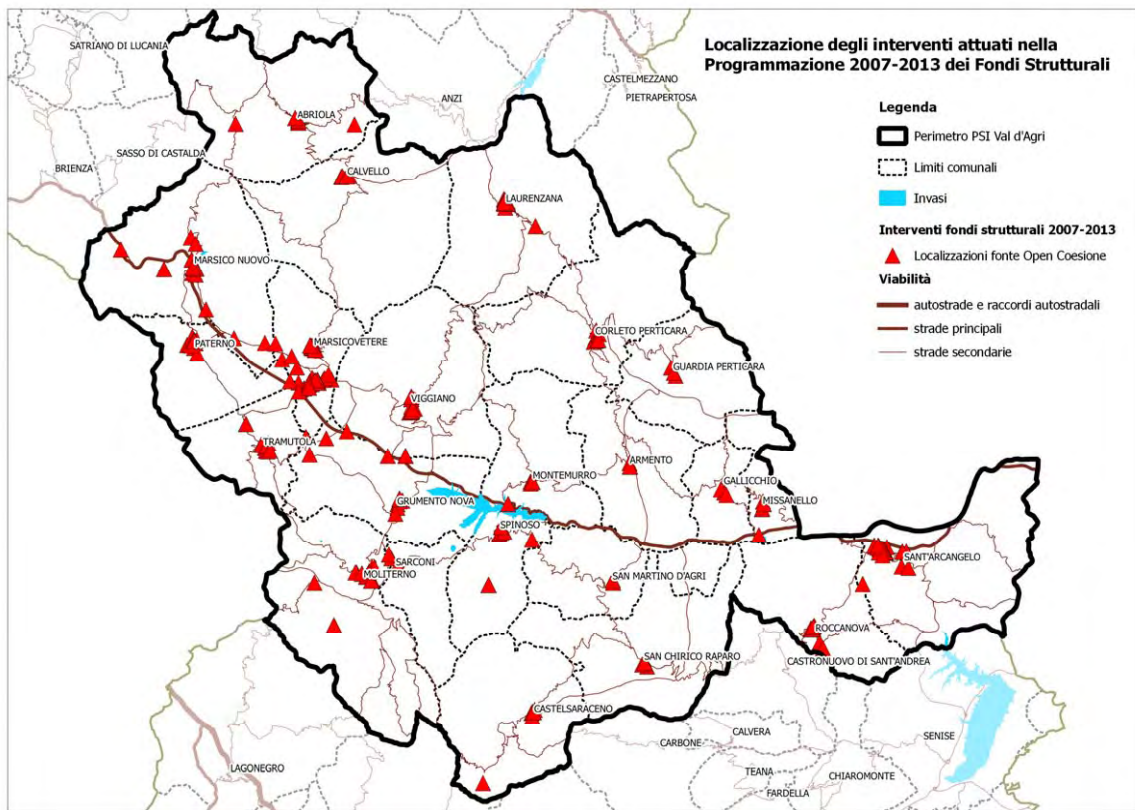


Fig. 5 Investments point pattern

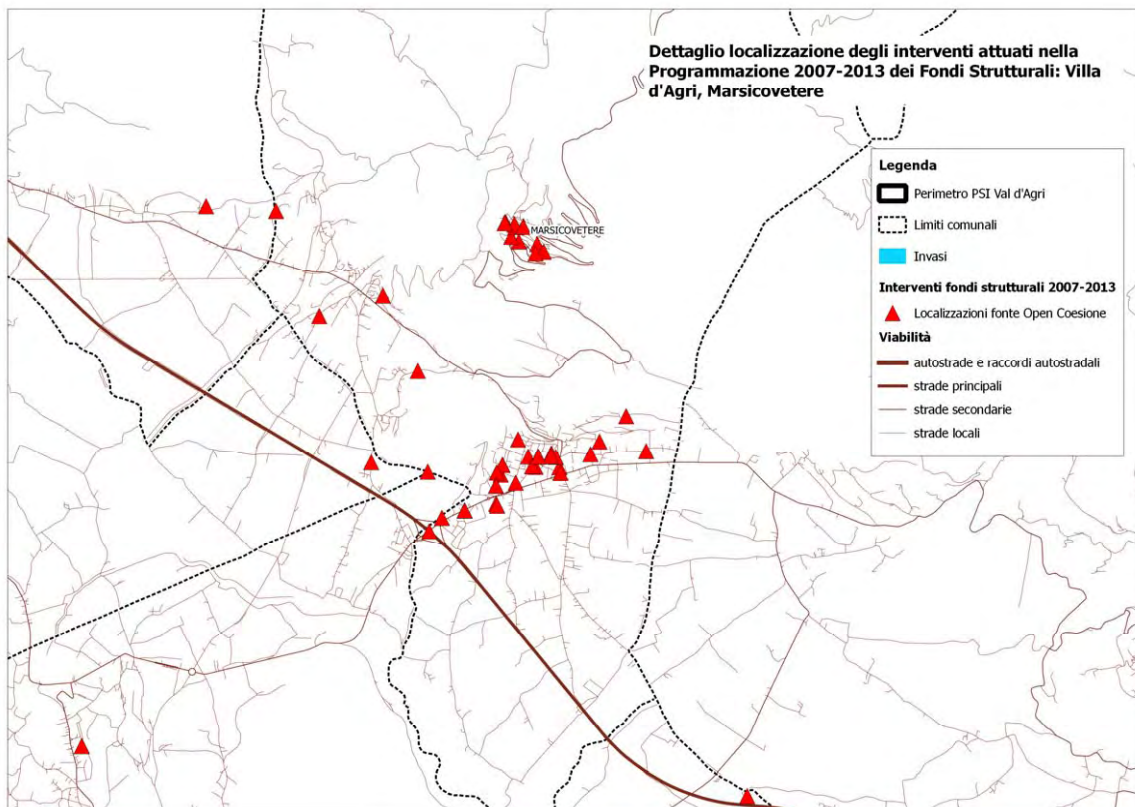


Fig. 6 Detail of investments point pattern

The proposed procedure allows to achieve high accuracy in punctual localization of interventions and projects. The table describes the accuracy level and specific uncertainty causes in percentage .

ORIGINAL DATA (N° RECORDS)	DATA REFERRED TO WIDER ADMINISTRATIVE AREA THAN MUNICIPALITY	LOCALIZED BY THE PROJECT ADDRESS	LOCALIZED BY THE NAME OF MUNICIPALITY OF THE PROJECT (MAIN URBAN CENTRE)	NOT LOCALIZABLE AS ERRORS AFFECT ORIGINAL DATA
<b>100</b>	<b>8</b>	<b>76</b>	<b>9</b>	<b>7</b>
	These data were excluded from representation as they relate to operations for which it is not possible to express a point impact	The geocoding in Google Fusion Table and the subsequent verification in Google Earth allow the unique identification of the investment point	In the case where the address was not recognizable by Google the location of the investment has been fixed on the main urban centre of the municipality	In the operational phase have been reported cases in which, on the basis of the information contained in the attributes of projects location, it was not possible to make an unambiguous choice of location. For example, it has been found several times that in the address field of a project was presented an information (also very detailed) referring to a location belonging to a municipality that did not correspond with project municipality.

Tab. 1 Accuracy of territorialisation process

## 5.2 PRELIMINARY TERRITORIAL ASSESSMENT

This spatial data infrastructure allows to develop several territorial elaboration. In the following figure we included some relevant maps showing the concentration assessment of investments adopting traditional data charting and geo-statistical techniques.

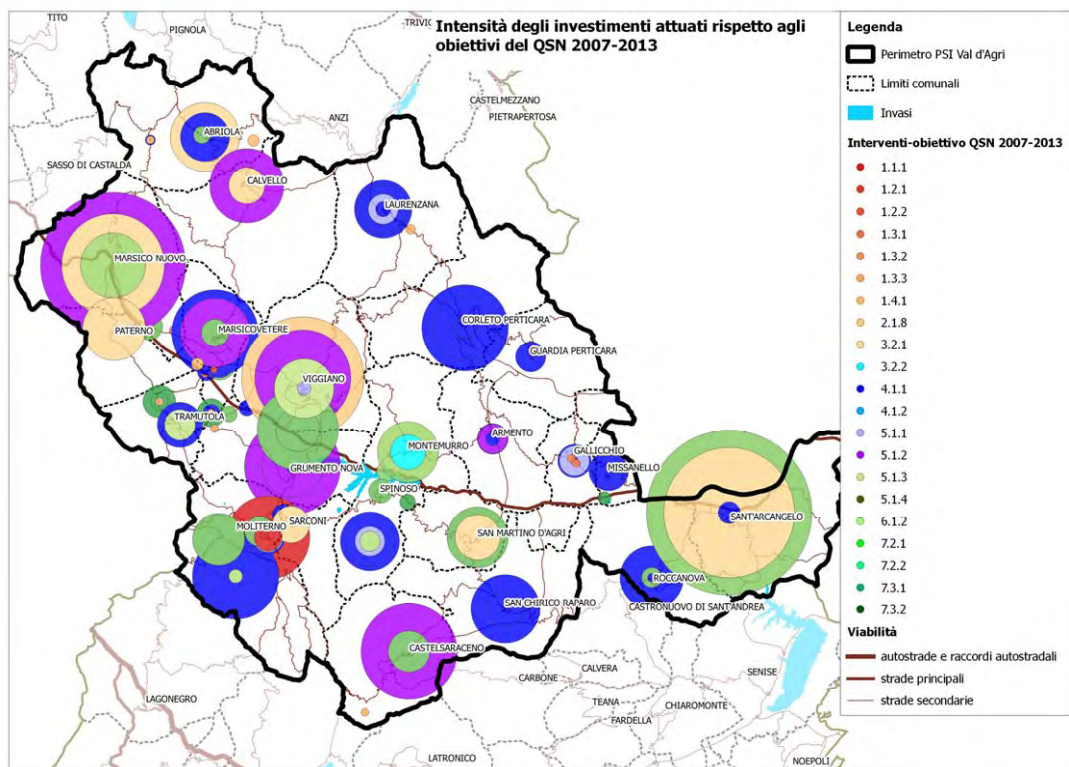


Fig. 7 Classification of investments intensity according to Strategic National Framework 207/2013 priorities

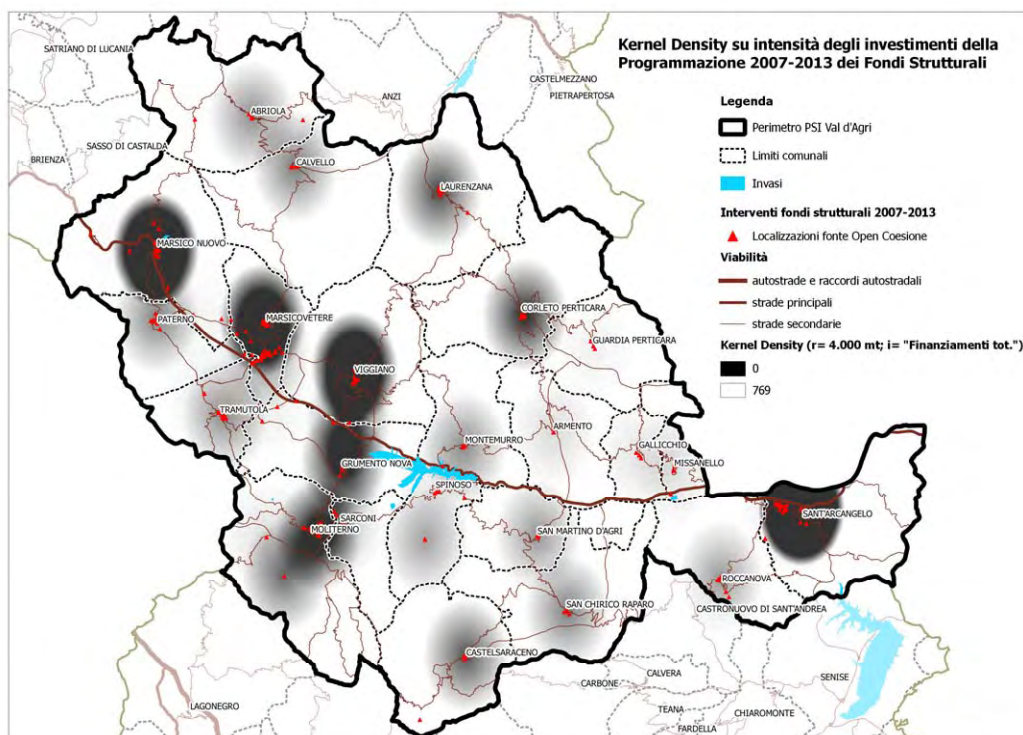


Fig. 8 Kernel density estimation of investments intensity in the study context

## 6 CONCLUSIONS AND PERSPECTIVES

Place based approach will bring to innovations in EU cohesion management. Where outcomes indicators measure the implementation of cohesion operative program (Barca *et al.* 2011) other efforts should be addressed to the identification of local specialization. It could generate not a fix picture of a context, places and communities evolve continuously especially as a reaction to the huge changes brought by economic crisis.

Main issues connected with the instances of the New Cohesion Policies are:

1. The need of a clear identification of the combined place-specific characteristics in each region;
2. a clear identification of the appropriate territorial context in order to implement effectively "smart specializations".

Open data phenomena represent an useful process that already driven the research from data production to exploitation of the informative value of several data sources available for everybody. But data and data analysis technique cannot bring to useful information. Regional science has the task to produce effective 'places' interpretation in order to support public decision in incoming generation of EU ROPs. We are in the case in which it is relevant to use numerous data sources and indicators assuming a variable rate of approximation in the accuracy of the datasets.

The information management and exchange implies problem in interoperability between sources, procedures and technologies. In the field of Regional development the ontological approach provided alternative interpretation models of the interaction between the context, the program and the beneficiaries (cfr. Scorza *et al.* 2012; Las Casas 2011; Scorza *et al.* 2010).

Specialization analysis should be developed through an integrated set of technique oriented to generate descriptive geographies of the EU region at a variable scale.

The preliminary elaborations proposed in section 5.2 of the paper just highlight the potentialities of managing such structured datasets. The perspective regards the application of such processes in the framework of managing Regional Operative Programs and generally development programs in order to involve beneficiaries and citizens in the process and mainly in order to inform the technical level on the success or failure of a policy in order to improve the plan in term of effectiveness. It is possible to affirm that a real time monitoring system of development investments is actually feasible with current open resources.

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