

TeMA

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The special issue collects the proceedings of the Session "Smart and Resilient Cities: Ideas and Practices from the South of Europe" of the European Conference On Climate Adaptation (ECCA), held in Copenhagen in May 2015. The contributions shed light on the relationships between the emerging paradigms of Smart City and Resilient City, providing hints for developing integrated strategies in the face of climate change.

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SMART AND RESILIENT CITIES IDEAS AND PRACTICES FROM THE SOUTH OF EUROPE

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SMART AND RESILIENT CITIES

IDEAS AND PRACTICES

FROM THE SOUTH OF EUROPE

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POLICIES OF RESILIENCE IN THE NEW INSTITUTIONAL PROCESS

THE CASE-STUDIES OF PALERMO AND SIRACUSA
IN THE SOUTH OF ITALY

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ABSTRACT

At the end of 2012, the PON METRO National Scheme was set up in Italy, inspired by the EU Urban Agenda. It also allows towns like Palermo to test and reach targets of urban resilience, focusing on mobility and sustainable energy in order to improve life in the cities together with innovative policies of social inclusion. Other medium-sized cities also tried to face the problem of urban resilience without using national funds. The city of Siracusa, for example, made use of EU direct co-financing schemes. This paper aims to analyse the planning projects and measures adopted in Sicily over the past few years in order to examine government approaches focusing on resilience or those that are somehow linked to it. The comparison shows that, despite the wide range of opportunities (European, National and Regional policies, etc.) a number of differences may be listed in the adoption of schemes for urban planning and for the implementation of transition measures from a linear, rational, sequential, normative and regulative approach to the circular, active, flexible and versatile approach needed to tackle the problems linked to urban resilience. This proposal suggests that new policies are needed. The new policies should focus not only on funds but also on the creation of an innovative laboratory of projects involving all the cities in equal ways and on the building of a platform to exchange data and compare the different practices adopted in relation to urban and local resilience.

KEYWORDS:

urban resilience, urban adaptation, urban planning, smart city, participation planning

1 DEFINITION AND OPPORTUNITIES

Today's debate on eco-friendly development often focuses on the unclear definition of the terms resilience, adaptation and sustainability. These three words are often used in studies and in documents produced by our government institutions or by planning institutions. It is important to underline a number of basic guidelines to improve the efficiency of the policies and practices adopted for the future of the cities. The relationship between the terms resilience and sustainability has been analyzed by Walker & Salt (2006), who state that resilience is the key to sustainability. Sustainability therefore includes a wide range of subjects which, in turn, correspond to useful criteria able to assess policies and practices of intervention that humans should adopt, according at least to the Bruntland Report, regardless of the risk that they may run.

Laying aside the meaning of the word in the psychological sphere, the successful use of the term resilience is due to the efficient communication of its creator who identified the assessment of the strength of the survival phenomena of nature as well as the consequences created by possible analogies between natural ecology and the analysis of social systems. In addition to studies in the field of ecology, resilience theory suggests to analysts of town and country planning that there are many implications, especially regarding the adaptive cycle which provide a clear image of the meaning of the concept also in areas unrelated to the experimental sciences: the four ecosystem functions re-organisation, exploitation, conservation and release (Holling, 1986; 2001, 394) may be seen as an attempt to understand how nature can fight extinction. Also the first definition of resilience reveals a number of features in common with the social sciences (Holling, 1973, 17). Analysis of ecosystems using the resilience model allows us to consider nature not only as a system that constantly seeks equilibrium, but also as a system able to evolve, depending on specific inner conditions and on the contest that surrounds it. There are four crucial aspects of resilience (Walker et al., 2004, 2-3). Among the various aspects, it is necessary to stress that ecosystem management may be included in the urban planning and, therefore, deal with challenges such as the risks and the duty of the administrations to tackle it (Holling, 2001, 404).

The deterministic approach, based on efforts to collect data and the use of a linear, consistent and sequential approach are not able to improve the correct prediction of future events. The idea of uncertainty should be accepted. It is crucial to recognize our ignorance and create a new pattern to conceive nature, which evolves through human actions in a way that cannot be anticipated by our predictive models (Holling, 1973, 21). The relationship between resilience and sustainability becomes more specific if we consider the field of resilience management. In this case, resilience may be considered as one of the aspects of sustainability in terms of value (Starik, & Kanashiro, 2013, 21).

An example of the joint use of the concepts of resilience and adaptation may be clearly detected in the European Commission operational plan (CE, 2011, 14).

Recent studies on the idea of applying resilience to planning (Davoudi, 2012; Porter & Davoudi, 2012; Davoudi et al., 2013) have changed those approaches which used the concept of resilience as a keyword able to reconcile the contradictions between the need to combine resilience approaches based on mutual learning, cooperation, participation and self-sufficiency – most of which have not yet been tested in the field – and the wide range of existing models of analysis and linear actions focusing on prediction, the number of data and their precision, the operative accuracy of the regulations and the implementation of organisational and mainly normative dispositions.

A resilience framework can be built around the crucial idea of preparedness, which is the learning capacity that a system has before, during, and after a critical event. Preparedness may be divided into three linked aspects: persistence (being robust), transformability (being innovative), and adaptability (being flexible). These are not just recommendations: in fact, adopting a resilience approach to tackle future or present shocks is extremely difficult both from the local and multilevel governance points of view. This term should

be used carefully and, above all, it is essential to pay attention to the characteristics and aspects of the social, economic and cultural ecological systems to which the resilience approach will be applied, as experts in ecology do. These difficulties are well known to central governments that are looking for a solution to the problems of climate change as they are asked to strongly cooperate at multi-institutional level. Therefore, they need a transition, that is to say, a deep change in the mutual cooperation between planning, decisional and financing organisms and the local systems in a way that will allow them not to be isolated and left alone (Carmin et al., 2013).

We have several analysis of the urban resilience in physical sense (Colucci, 2012; Galderisi, Ferrara, 2012; Salat, Bourdic, 2012) and now we need more studies and theories on the social and urban resilience policy connections. This brief introduction shows that, despite resilience belonging to the world of natural science, its application in the world of ecological systems has produced a number of creative ideas for planning at all levels. It represents a crucial approach to adopt before, during, and after a critical event occurs. Adaptation, on the other hand, involves a wide scope of situations in which resilience is applied to support the sustainability policies to be adopted and implemented.

2 RESILIENCE IN ACTION

By analysing the guidelines of resilience theory, it is possible to identify several action opportunities that municipalities may implement to face the most urgent challenges, from safety risks to social problems such as mobility, energy saving and social exclusion (that will be examined below). As a result, it is possible to list a series of aspects of resilience that should be put into force by local governments: a) learning capacity, b) redundancy, c) diversity, d) self-sufficiency and connectivity. The above-mentioned theories provide useful guidelines for the adoption of actions concerning the learning capacity that a system develops from past and present events as well as the importance of conserving inner diversity in order to improve the ability to withstand external stresses and critical shocks. It is therefore necessary to stress the important role of redundancy and, above all, self-sufficiency and connectivity for local governments.

Overabundance of data, information and infrastructures for facing the problem of risk assessment is often considered overwhelming and a waste of public resources by urban and local policy makers. They often focus primarily on tackling social and economic problems and then on predicting the risk that such emergencies may actually occur. On the contrary, urban systems need to constantly implement redundancy, especially in terms of public safety, i.e., the distribution of drinking water and energy, building alternative highways and railways in the event of structural failure in the main ones, public health, building shelters in the event of earthquake or tsunami, etc.

On several occasions, local policy-makers have applied the resilience approach to food by creating urban gardens to gradually create a balance with highly built-up areas¹. In order to give greater importance to redundancy in the public sector, policy-makers often use a linear and rational approach, setting-up new laws and regulations, but in so doing, they increase red tape. This kind of sequential approach influences the choices of policy-makers. As a result, the level of resilience is at risk as well as the evolving ability that should characterize a resilient adaptive cycle. In Italy, this is true for the programs adopted by the Civil Protection Agency and implemented by the central Government via the Prime Minister, without the involvement of the Local Authorities.

As far as self-sufficiency and connectivity are concerned, it is necessary to draw a parallel between the family sphere and the ability to communicate. Those who are alone or have difficulties in communicating possess lower resilience than those who are able to create dialogue or accept support and advice, especially

¹ See the case of the proliferation of urban gardens in Milan. Retrieved October 20, 2015, from:<http://www.agricity.it/pagina-di-esempio/orti-in-zona/> (accessed on May 30th 2015)

when these are provided by agencies and associations close to the subjects and not belonging to a different contest. Self-sufficiency is thus applied not to a single person living in a determined ecological system but to the system itself. For this reason, the inner connectivity of a system is a pre-condition to self-sufficiency and diversity, as stated above. In a large local urban system, decentralization is crucial as it represents an essential aspect of urban planning, aimed at developing self-sufficiency and inner connectivity (Harrison et al., 2014).

It is furthermore necessary to stress that besides the adoption of actions of horizontal cohesion inside the system and between local systems, it is also crucial to create vertical cooperation and subsidiarity between central and local governments.

3 THE SITUATION IN THE SICILY REGION

The island of Sicily constitutes an autonomous administrative Region of Italy and has its own special statute. The central government acknowledges the Region's autonomy in relation to the environment and urban and territory planning. In terms of risk assessment, the main regional plan is the Regional Civil Protection Programme. This scheme² provides the tools for identifying and assessing risk in the region, to identify the different regional areas and to select and plan preventive measures to mitigate critical events.

According to the national government law, the regional government of Sicily has set an internal organization for risk assessment and for the planning and programming of interventions for prevention and response to disasters. For example in the field of hydro-geological risk, considering homogeneous (n.9) zones of alert, the Multirisk Regional Centrum evaluate the effects on the ground of rainfall by the processing of the data collected by the control units rainfall considering the time series.

The Civil Protection Plan is consistent with other regional plans: the Hydrological System Plan, the Forest Fire Plan, the Regional Landscape Plan, and the Water Sanitation Plan. A number of research hubs cooperate in drawing up the different Civil Protection plans in Italy such as Enea, the Institute of Geophysics, the National Geological Service and others. The plan is implemented through the work of a specific regional office, the "Decentralized Multi-Risk Operative Centre of the Region of Sicily"³ which collects correct and updated data ready to be used by the Civil Protection. The Regional Civil Protection Plan draws attention to, and studies, the assessment of regional risks and detects risk prevention and mitigation measures. The plan aims to improve land management by the Civil Protection Agency as follows: a) identifying public buildings, especially schools, b) upgrading earthquake security and/or the refurbishment of sensitive and strategic buildings, c) detecting and planning actions to preserve the hydrogeological system. The regional risks assessed by the Plan are: 1 – seismic and tidal wave risk; 2- hydrogeological risk; 3 - volcanic risk; 4 – industrial and environmental risk; 5 – forest fire and interface risk; 6 – health and social risk.

Environmental monitoring is carried out by the Environmental Department of the Regional Office for the Environment and the Territory⁴ whose objectives are: a) strategic environmental assessment, b) environmental impact assessment, c) integrated environmental authorisation, d) impact assessment, and e) EU planning for structural funds⁵. The most important aspects of designing the resilience measures to implement in the regional cities include: a) drawing up an "Environmental Status Report", b) outlining the "regional opinion on national plans and programmes", and c) collecting and updating data concerning "environmental and sustainable development indicators for environmental risk assessment measures". In

² Decision of the Regional Executive of Sicily no. 2 of January 14th 2011.

³ Decision of the Regional Executive of Sicily no. 530 of December 19th 2006, under the Directive of the President of the Council of Ministers of February 27th 2004.

⁴ As far as "environment norms" are concerned, the legal reference is the Italian Legislative Decree 152/2006 and the subsequent amendments and additions.

⁵ Structural Funds – Resilience in Cohesion Strategy. Retrieved October 20, 2015, from: http://ec.europa.eu/budget/library/biblio/documents/fin_fw1420/MFF_COM-2011-500_Part_II_en.pdf.

December 2014, this Regional Department drew up a Regional Plan for flood risk management. The final plan will be set up in 2015 thanks to the cooperation of Sicilian Institutions and scientific centres. This plan will provide the guidelines for integrated urban planning in relation to rain risk and its direct and indirect impact on the environment. It is the first regional plan to modify the local planning program, starting with the data collected by the risk assessment system. The plan is compliant with European directive n. 6 of 23rd October 2007. This directive promotes the improvement of flood risk assessment and management in order to reduce its negative impact on human life and health, the environment, cultural heritage, economic activity and infrastructures. The Directive splits planning activity into three phases: phase 1 – preliminary assessment of flood risk; phase 2: development of maps of flood risk and danger; phase 3 – preparation and implementation of flood risk management plans (by 22 December 2015). A periodical review and update will be carried out, taking into account the impact of climate change on the occurrence of floods. There will be, a) a review of the preliminary risk assessment at the end of 2018, b), a revision of the flood risk and danger maps in 2019, and c) a restructuring of the risk management plan in 2021. At a later stage, the reviews will be carried out every six years and will take into account the impact of climate change on the occurrence of floods. Legislative Decree n.49 of 2010 assigns the management of flood risk to the Water Authority which, nevertheless, has not yet been established by the Central Government. As a result, the plan must be implemented by the Regions themselves (Legislative Decree 219, 10 December 2010).

The website of the Regional Agency for the Protection of the Environment is responsible for updating the environmental data collected throughout the region.

Besides the Hydrological System Plan and the compulsory disaster risk planning carried out by the Civil Protection Agency, there are no other crucial regional plans to improve the integration of the regional measures on sustainability capable of acting as an interface with the European Union and the Central Government at the upper level, and with Municipalities and the Regional and Local Institutions at the lower level. Despite several attempts over the last 40 years, in 2015 the Region still needs: a) a New Plan for Transport and Integrated Logistics; b) a Regional Waste Plan; c) a Regional Landscape Plan, and d) a Regional Plan for Economic and Social Development – which must be different from the structural fund operative programs as there is a need to set long-term targets and create sustainability schemes going beyond a six-year period.

The urban regional law dates back to 1978 and includes some important changes introduced in 1991. In 2003 was the draw of regional plan with several innovative ways of physical data interpretation for the planning regional choices⁶. During the 2013 the policy-makers tried to drawing up new regulations to renovate and remodel the tools of local urban planning by a regional law of urban planning⁷.

Given the lack of regulation for a regional sustainable development plan, the measures promoted by the National Government to improve access to the European structural funds represent the only analysis and implementation system to detect and plan environmental control and analysis actions in Sicily. The measures included in the national operative programs, divided over the four structural funds available, are scattered over the different regional offices, thus losing in efficiency.

⁶ Regione Siciliana, Dipartimento Urbanistica (2003). Rapporto dal Territorio 2003. Sicilia. Istituto Nazionale di Urbanistica, Roma (Italy). Retrieved October 20, 2015, from http://www.artasicilia.eu/old_site/web/servizio_1/scarica.php?id=rapporto_inu.pdf
Regione Siciliana, Dipartimento Urbanistica (2009). Argomenti di Pianificazione 2009. Contributi per la riforma urbanistica in Sicilia. Palermo (Italy). Retrieved October 20, 2015, from http://www.artasicilia.eu/old_site/web/servizio_1/argomenti_2009.pdf

⁷ Pessina, R. (2015) Ddl riforma urbanistica bloccato all'Ars da 2 anni. La sedicesima legislatura e le materie che richiedono un urgente intervento. Ddl n.161 del Mpa, Ddl n.135 del Pd e Ddl n.873 del M5S. *Quotidiano di Sicilia*, August 26, 2015. Retrieved October 20, 2015, from <http://www.qds.it/20298-ddl-riforma-urbanistica-bloccato-all-ars-da-2-anni.htm>

Municipalities find it difficult to implement the different operative plans which directly depend on the choices of the regional departments.

Given the confused regulations and the existence of two different procedures (there are two different laws: national and regional), the individual municipalities must face huge difficulties when designing an efficient expenditure plan, and respecting the schedule set by the European regulations.

Nevertheless, it is essential to complete the regional physical planning within and between the regional departments. Furthermore, it seems first of all that the cities must continue to test the environmental risk adaptation measures which should be regarded as the guidelines for daily urban planning. The latter may be seen as the pillar of regional urban reform.

To conclude, it may be stated that despite the existence of a detailed but outdated and incomplete sustainable planning scheme, the regions still need to come up with a regional resilience plan of adaptation for specific urban management areas: transport, building, and energy saving. Cities must address present/future shocks alone or by seeking the help of the National Government or by experiencing a transition to different approaches to government.

4 ATTEMPTS OF SOCIAL RESILIENCE IN THE CITY OF PALERMO

4.1 THE URBAN CONTEXT

The City of Palermo, together with other higher level institutions, has long been working to recover its cultural heritage, on the one hand, and to reduce the infrastructural gap on the other, especially in relation to the public transportation system, waste-management and completion of the sewerage system. If these targets are not met, no growth or development is possible. Specifically, the last local governments have made it a priority to recuperate the southeastern coast and, more broadly, the whole coastline of the Gulf of Palermo which, in the past, was a favourite destination of painters, a quiet place to admire and enjoy the beauty of the city, its endless gardens, its crystal-clear water, its beaches and temperate weather. Nowadays, new projects to improve transport and the sewerage system are underway (new tram lines, a new railway, a new elevated subway in the city centre etc.)

These projects were planned and financed many years ago and were being built simultaneously and quickly in order not to lose the public co-financing resources in the event of problems linked to poor knowledge of the subsoil (archaeological/hydrological risk) or due to the technical and financial capacity of the building companies obliged to respect the schedule set out in their contracts.

Because the projects are old, communication between the citizens and the local administrators failed. As a consequence, some forms of social protest emerged, with further risks of delay.

Strategic planning focused on the improvement of the transportation system and, in particular, of road transport. Meanwhile, after Unesco acknowledged the artistic value of Palermo's cultural heritage, the local government is ready to make an effort to protect these assets by creating pedestrian areas and other urban solutions. In general, local policy-makers based their actions on solving these problems and the urban regeneration of abandoned or rundown areas to maintain political consensus and to seek cooperation at national and European level. No action has been taken to tackle the economic and social crisis affecting the city, nor to face the environmental crisis due to the presence of unidentified refuse on the southeastern coast or sea pollution resulting from the poor control of dumping and the incomplete and outdated water treatment system in the whole of the Gulf.

Climate change has already caused serious hydrogeological problems and several parts of the city are at risk of flooding. Among all the measures taken by the local government thanks to the European Structural Funds, the Operational Program for the Metropolitan Cities of Palermo (PON METRO) may be regarded as

the most interesting intervention to detect points in common with the resilience approach. Other tools, such as the municipal social plan, concern future crisis adaptation and preparation measures.

4.2 THE SOCIAL PLAN

The City of Palermo is undergoing a period of huge social crisis which has recently worsened due to the high level of unemployment caused by the international financial and economic crisis. The latter further exacerbated a situation that was already critical in the past and that has reached one of the highest levels of criticality in the whole nation⁸. In addition to the increased female and youth unemployment rate, the high number of families at risk of poverty represents the most serious social emergency, together with those citizens that don't have resources and access to decent housing.

Every day, the social department of the government of Palermo has to "provide efficient responses, in order to avoid a systemic risk in the short and long term" (Mayor's Annual Report, 2013-2014, p.55).

The local government should test new actions to construct the basis of resilient planning counting on two leverages, one for the short term, and one for the medium term (the PON Metro) together with one for the long term, namely a comprehensive Social Plan. The plan was launched in 2013 and through a continuous dialogue with the other existent plans (the town planning scheme, the strategic plan and the city covenant) and with the EU Structural Funds planning for 2014-2020 (ERDF and ESF) aims to increase participation by the municipalities thanks to the cooperation of the presidents and counselors in meetings for public and private social partners.

The Plan's main target is to create a Laboratory able to face and solve the problems linked to the Citizenship rights, here regarded as the main tools to improve Palermo's urban life. The social urgency is still further increased in Palermo, due to the employment crisis caused by the international economic and financial situation, which has worsened a pre-existing critical situation and is proving far more severe than in the rest of Italy. In addition to the unforeseeable increase in unemployment among young people and women, the most serious social urgency perceived by the municipal authorities is the growing number of families living below the bread line and the same number of citizens who are completely homeless and have no resources in order to obtain basic accommodation.

For the municipal authorities, it is necessary to experiment with solutions meeting the need to go beyond simple responsiveness to social phenomena, laying the foundations for a resilient program through two medium and short-term levers (PON METRO) and a long-term lever with an authentic Social Plan. The plan was started in 2013 and, by constantly referring to all the other plans – the general town planning scheme, the strategic plan and the city covenant – and by programming the 2014-2020 Community Structural Funds – especially ERDF and ESF – is based on a participatory incremental approach that, starting from public sector meetings, has progressively involved municipalities, where presidents and councilors have taken part in formal meetings open to private and public authorities committed to social issues

The Social Plan building process started from an event were some public workshops held on April 10th-11th 2013 at 'Cantieri alla Zisa' public cultural farm location. The issues of this 'Social Plan for the City' was discussed by using a bottom-up methodology with several urban stakeholders: Ong, delegates of municipal districts, social and development local agencies, social & health services, school observatory, academics, trade union delegates, entrepreneurs and financial advisors. The workshops included various opportunities to meet, ponder and share views about the management of: a) Europe and Mediterranean b) Metropolitan City/Area and Urban Identity, c) Development Strategies, d) Design & Assessment, e) Formal & Informal

⁸ The Economist "A tale of two economies. As the north limps ahead, the south swoons" May 16th 2015. Retrieved October 20, 2015, from <http://www.economist.com/news/finance-and-economics/21651261-north-limps-ahead-south-swoons-tale-two-economies>

societal Networks, f) Social Services & System Actions, g) Participation, h) Ideas, strategies, programs and resources to re-thinking the Metropolitan City of Palermo.

The Social Plan is defining at administrative level (without public costs) only during 2015. This Plan provide for the creation of a new Social Laboratory with public and private participation and cooperation. The Social Laboratory promote a dynamic action of transversal and multi - sectorial setting to regenerate and motivate the Municipality's administrative and technical several parts toward a new organization open to the citizens at the metropolitan level.

The main goal of the Plan is to create a Workshop to address and solve the issue of citizenship rights, fundamental tools for radically modifying Palermo's social fabric.

4.3 THE PON METRO PLAN IN THE CITY OF PALERMO

The National Operational Program for metropolitan cities⁹ is a tool coming under the co-financing policies of the EU Structural Funds, under the competence of the national government. The areas which the national programme apply to are the metropolitan areas, three of which are situated in Sicily: Palermo, Messina and Catania. Most of the co-financing resources are allocated in the South of Italy.

In the City of Palermo, the PON Metro Social Inclusion and Smart Cities policies focus on a specific area called "Southern Coast". This area is characterized by a high presence of organized crime and the existence of the last free areas suited to urban transformation. The local administration has often tried to allocate external investments to these areas in order to support the social actions undertaken for the local population. This initiative also involves other municipalities situated close to the City of Palermo and throughout the Gulf.

The actions planned involve the building of cycling lanes, bike sharing, smart lighting and many technological actions to support social services, including social housing.

The Mayor's Report for the period 2013-2014¹⁰ provides a clear idea of the targets set by the local administration in relation to the two main pillars of cohesion policy (Smart and Inclusion) that must be respected in the framework of multi-level connections between national and regional planning (Urban Agenda). A detailed proposal was launched by the City of Palermo in December 2014. During 2015, the PON Metro will be reviewed and implemented by the European Commission. For this reason, analysing the single projects that applied for financing seems unimportant. On the other hand, it is crucial to examine the strategic approach adopted by local government in order to underline the main aspects of resilience and their chance to be implemented by the local administrators in Sicily. The administration tried to allocate some projects financed by the Minister of Internal Affairs to the area that surrounds the above-mentioned district of Brancaccio, which is affected by a severe economic, social, environmental and cultural crisis (Cavaleri et al., 2008).

The provisions of this plan focus on the south-east of the city, traditionally characterized by agricultural and industrial production as well as by a greater presence of railway infrastructures and the national and local bus terminal. In this area of the city, where almost seventy thousand people live, the city's first tramline should be operative in 2015.

The one hundred million euros plan – thirty of which will be used for social problems – aims to:

- increase sustainable mobility in urban areas, especially the south-east coast

⁹ PON Metro as national policy. Retrieved October 20, 2015, from http://www.dps.gov.it/it/programmazione_1420/PON_Metro/index.html (accessed on May 30th 2015); Pon Metro as pre-implementation phase.

¹⁰ Retrieved October 20, 2015, from <https://drive.google.com/file/d/0B9NoeFeOf2sRaURzX0RTQIZDZ0E/view?pli=1>.
¹⁰ 2013-2014 Annual Report by the Mayor of Palermo. Retrieved October 20, 2015, from http://livesicilia.it/wp-content/uploads/2014/09/Relazione_2014.pdf (accessed on May 30th 2015).

- reduce energy consumption in residential and non-residential public buildings and facilities
- promote digital services in other sectors, through the implementation of smart integrated services (joined- up services).

The plan also includes actions to promote social inclusion and fight poverty as the local administration puts the social crisis at the top of the agenda.

All the PON Metro projects represent an integrated action of e-inclusion whose objective is to promote the inclusion of the weakest and the poorest. This strategy will be implemented through the development of new services and the adoption of new technologies for users and to support the actions of other associations and mediators.

The benefits will be: a higher level of literacy among disadvantaged groups; reduced costs of social services and a more effective use of resources (operators); the reduction of the housing crisis; de-mobilization; a new way to use transport; the chance to use space in a new way; the creation of multifunctional areas close to residential areas.

The e-inclusion strategy of Palermo PON METRO can be carried out by developing new services to the troubling citizens. This strategy wants to exceed the traditional 'standard' service delivery towards a shared building of ad hoc services with (not for) individuals or groups of troubling citizens. This strategy is embedded in a sharing frugal technology that is common to public administration and all citizens (smartphone, etc.) not centered in a new big smart structure. It is important and very simple that local authorities activate open data to a new dimension making social delivery with citizen participation. In the PON METRO program there is a 'Social Lab' and a big centre for science museum with social targets (service delivery to the Brancaccio district).

So that highlights the evidence of several analogies of the PON METRO program with the Social Plan but the first initiative has no connection or crossbreeding with the second one. Probably the reason for this no matching is located in the deep difference of the logical framework of the two policies of the Municipality: the Social Plan is an 'open' structure of a new form of PPPP (Public Private Partnership People) but the PON METRO is a technical proposal of a 'problem solving' model.

5 URBAN RESILIENCE IN SIRACUSA

5.1 THE EXPERIENCES OF A SICILIAN SMART CITY

Following the IBM Smarter Cities initiative, which has awarded 116 Municipalities all around the world in four years – with Siracusa as the only Italian city – Siracusa has fostered a structured activity programme in the framework of "smart" policy innovation. The main activities include:

- awarding the "Renewable Energy and ICT for Energy Sustainability" tender called by the National Research Council (CNR) in agreement with the National Association of Italian Municipalities (ANCI);
- to be selected by the York Municipality (UK) as a partner in the good practices exchange programme for the URBACT II PILOT PROJECT – GeniUS PLATFORM;
- to award SMAU Rome 2014 with the Smart City Roadshow prize for accomplishing, in collaboration with IBM, the "Siracusa Love City Index" project.

The resiliency projects carried out by the municipal authorities are organized into the following phases.

5.2 IBM SMARTER CITIES CHALLENGE

The City of Siracusa on the island of Sicily in Italy was one of the 100 cities selected to receive a Smarter Cities Challenge grant from IBM in 2012 as part of IBM's citizenship efforts to build a Smarter Planet. During

three weeks in June 2012, a team of six IBM experts worked to deliver recommendations on key challenges identified by Siracusa.

Every recommended activity is founded on five principles. Syracuse promote Smart implies, not only foster economic innovation, social inclusion and environmental sustainability, but also:

- Promoting innovation in the protection and enhancement of cultural and environmental heritage;
- Encourage research in renewable energy;
- Make the efficiency of logistic systems and the flow of goods, people and ideas;
- Promote the active sharing of choices to promote the approaches taking on new global challenges;
- Connect and integrate infrastructure and urban services through the development of smart solutions based on ICT.

Following these principles should be automatic for everybody who shares the vision for the future Siracusa. They are values that should be kept and fulfilled by all stakeholders and citizens, in every activity and project that leads to a smarter Siracusa. Collaboration is key – all stakeholders need to be involved and participate in making Siracusa smart. Information-sharing – all actions, plans and decisions must be transparent. This is fundamental for building trust amongst stakeholders who are working towards a common goal. Decisions based on data – both operational and strategic long-term decisions should be based on facts supported by reliable data collected from a variety of sources. The Siracusa brand – all actions and projects must take the building and preservation of the Siracusa brand into account. Influence behaviors – bad habits and lack of civic duty should always be positively influenced through incentives and enforcements.

Enablers make up the first set of pillar recommendations based on these principles. They define key, fundamental projects, which are essential to the success of any further interventions. It is critical that any project in the areas of tourism, environment or urban planning be developed through these enablers. Without this, the chance of success when intervening in any project is dramatically reduced. The pillar recommendations are as follows:

- Enhance collaboration – “The power of many”. This pillar is defined by the projects, actions and tools that can improve collaboration between municipalities, the various stakeholders, and citizens
- Build a Smarter City Centre of Excellence (CoE) – “Manage through data” defined by efforts to improve planning and management methodology for all the projects recommended by the SCC team. It also introduces the means for measuring success and tools that enable better decision making, both from the point of view of a short-term operational horizon and long-term strategic planning.

5.3 SMART CITIES LIVING LAB SIRACUSA

The city of Siracusa has been awarded the CNR-ANCI “Smart City Living Lab - Energia da fonti rinnovabili e ICT per la sostenibilità energetica” prize, having won the supply and installation of innovative technologies in the Cultural Heritage field and the management of the city services. The project started out with the aim of enhancing artistic and cultural heritage in the City of Siracusa, by studying and implementing innovative and interactive usage methodologies. The project has also set itself the objective of raising citizens' and tourists' public awareness of environmental issues. Some devices have been installed in the territory to monitor meteorological and environmental parameters, useful for the study of “urban metabolism”.

In addition to a high precision fixed station at the city hall, 6 other fixed stations have been installed in information totems and 10 georeferenced mobile stations, 7 positioned on municipal police cars and 3 on the Traffic Police's mounted officers' assisted bicycles.

5.4 TWINNING PERUGIA-SIRACUSA "TOWARDS A SMART CITY"

Siracusa has joined the Directorate-General for the Regional Community Policy initiative of the Department for Development and Economic Cohesion (Ministry of Economic Development). In the context of the AGIRE POR 2007/2013 project, it promotes the creation of twinnings with the aim of transferring models from tendering administrations to recipient administrations in convergence regions, developing together with the Municipality of Perugia the PER-SIR Twin project 'toward the Smart City'.

The aim of this twinning can be summarised as the transfer, by Perugia to Siracusa, of all models –tried with success– for the implementation of central monitoring and traffic management, both public and private.

The aim of this twinning can be summarised as the transfer, from Perugia to Siracusa, of all successfully tested models for the implementation of the central monitoring and traffic management, both public and private. The fundamental task of the monitoring and traffic management centre is to develop observation and control strategies in order to optimise road network use via traffic fluidification and distribution, and the limitation or reduction of access to critical areas in terms of congestion or environmental conditions.

5.5 ENERGIA INTERREGIONAL OPERATIVE PROGRAMME

Prototypal Action "a", replacing traffic lights with LED lamps and installing traffic light controllers, and webcams.

Prototypal Action "b" replacing street lamps with LED lamps and enabling implementation for the transmission of a high-speed power line carrier to supply services, also aimed at a more effective and efficient management of the Limited Traffic Zone in the historic centre and better management of freight traffic in protected areas.

Prototypal Action "c" Set of photovoltaic shelters covering the parking area located close to the Siracusa Law Courts.

5.6 URBACT GENIUS

Since January 2014 the Municipality of Siracusa has been involved in the European Urbact Genius project, aimed at transferring the good practices of open innovation from the city of York to Siracusa, Tallin and San Sebastian. Open innovation is a method, a governance approach that tears down the barriers of public administration and addresses all citizens in order to plan together how to develop a territory. The project has allowed us to test a new development method and has combined the use of an online platform promoting discussion with all the citizens and the use of participatory methods making it possible to listen to the people and co-plan with them focusing on a specific challenge related to our city. Among the many priorities and needs, it was decided to start from the most critical area of the city: the outskirts, and in particular Mazzarrona, the heart of the Grottasanta district.

6 - DISCUSSIONS

The Municipality of Palermo has adopted a solution in order to cope with the social and mobility emergency, meant as a priority for the growth and development of the city, viewed not as bases/conditions for development, but as a risk of loss/extinction of any other future development opportunity. This solution consists in a resilience approach focused on networking information, on trying to enable the municipal authorities to pay attention to the city's human powers, not before, but during the crisis, and is jeopardizing social cohesion and therefore undermining the city's resistance possibilities. Every project effort and the

municipal authorities' ability to acquire financial resources focus on mobility, therefore on the attempt to deal with the traffic problem through structures (major works). The city is stressed by major construction sites in every district, both at the centre and in the outskirts. Such works are expected to be finished and completed without excessively compromising the existing tertiary activities and without seriously damaging the existing building stock, both of which are already being damaged because of design errors or because of enterprises experiencing difficulty in delivering within the terms of their contractual obligations. Indeed, serious problems and protests are arising in the areas where the works are concentrated: these are slowing down because of the crisis that is bringing the whole of the construction industry in Sicily to a stalemate. More major works will have to be designed and put into operation. The effort required for the new infrastructures to be designed, scheduled, financed and built in a very short timescale in order to avoid losing Community co-financing is progressively neglecting the real resilient work which, as already stated, consists in local and supra-local planning.

As Siracusa is a smaller city, on the other hand, it has been possible to progressively train the municipal authorities on a number of diverse issues aimed at understanding the main risks: pollution, loss and devaluation of its world famous cultural heritage and loss of energy-saving power. The various local governments are increasingly aware of the risks related to Siracusa being near the petrochemical field of Priolo-Augusta, which is causing highly dangerous geological phenomena (Aureli et al., 2004); therefore, the municipal authorities have gradually been dealing with problems through the few available resources. Being aware of their significant limits has not prevented the authorities from aiming to network all their internal resources and successfully attempting to ask outside powers for aid, in order to achieve results which wouldn't be achieved autonomously, but simply by openly admitting their difficulties. Such willingness to relate to external outside powers is allowing the municipal authorities to achieve significant results. These include IBM awarding Siracusa Italy's smarter city, thanks to the request for help and support for a guide to a resilient approach to the town's environmental risk issues (air and subsurface pollution due to the nearby petrochemical field), economic risk (the industrial crisis causes unemployment and is not a trigger for agricultural recovery), social risk (social degradation in the outskirts) and cultural risk (the Unesco heritage is in jeopardy because of environmental pollution and management difficulties due to the lack of public resources). In comparison with the current trend, limited but steady success, from the point of innovation in all the sectors at risk, has led to a positive assessment, provided that long-term policies are not discontinued and are regularly followed up.

Urban and territorial planning based on resilience approaches helps decision-makers, stakeholders and citizens – individually, together and as a community - to enact self-learning processes. The tentative approaches put into practice in extreme southern Europe that have been briefly mentioned above, even if they are not explicitly ascribed to resilience, demonstrate that municipal authorities significantly care about social and infrastructural issues, which are of interest in analysing planning styles. Their uniqueness, in comparison with the rest of the country, perhaps lies in the different way shock is perceived, which is the real catalyst to individual and collective resilient approaches. The shock perceived in this European region is a constant economic, environmental, social and cultural concern, objectively ongoing since the end of the Second World War. Therefore, emergencies are easier to deal with only when they arise, whereas being prepared for shock is difficult. Preparation activities – e. g. overabundance, which always appears useless or risky – is in some cases neglected - by common consent - in favour of infrastructural empowerment, the collection of abundant data, and promptness in carrying out planned projects. As a result, reactions to foreseeable future shocks vary or are different for every municipal authority.

The most outstanding aspect is the relationship between decision-makers and uncertainty management, which becomes critical when major public work or complex care systems for the resistance of social cohesion

have to be performed or planned. Better responsiveness seems to emerge when the municipal authorities set achievable objectives, in line with the effectively available capabilities and power and, especially, when the capability of building long cooperation networks exists and is consolidated. If municipal authorities set large-scale and politically stimulating objectives, and when concrete physical transition of the city with a view to reacting to possible concerns and real decline risks depend on such objectives, flexibility decreases. At the same time, these actions stretch and may become disproportional if compared to the levels of internal cohesion and interaction capability aimed at sharing expertise outwards - and not at requiring power, regulations or finances.

The two local contexts show that resilience is detectable even in the extreme south of Europe, although it is not explicitly mentioned. The expectation about the outcomes of such approaches, though, focuses on the next stage, in which both Palermo – the 5th most populous Italian city – and Siracusa – Italy's 34th most populous city - will directly address the most significant environmental risk-related issues. The most urgent action in Palermo is to address coast pollution and the flood and hydrogeological risks aggravated by the massive overbuilding of the entire flat area, while in Siracusa it will be necessary to address desertification and seismic risks and those related to the air and soil caused by the petrochemical processing plants. In compliance with European planning, large public resources were and are still available in order to address and solve at least the issues related to hydrogeological risk, thus there is no shortage of tools that can be deployed, not only for urgent projects for securing entire hill and mountain slopes that have been sliding down over the last ten years and are even putting at risk some strategic connection systems in Sicily. The most suitable solution, instead, should be to plan these activities in preparation to adopt mid and long-term resilience approaches. This requires that planning in large cities like Palermo be no longer like a black box about which only decision-makers are thoroughly informed. In this way, as soon as implementation difficulties arise, citizens can disagree and strive to defend what they consider a priority, even though objective chances to intervene no longer exist. In these cases, even though the willingness to operate without wasting time in order to maintain political consensus is comprehensible, it is impossible to address social, economic and environmental risks without resilience-approach planning, otherwise works and protests would risk coming to a stalemate and political consensus would collapse. Participation and sharing will have to become part of the planning activity of the main actions, especially as far as major works – public mobility, energy, and new urban cores - are concerned, so that issues arising when addressing social, economic and environmental emergencies will produce collective learning. Creating participation opportunities only when the construction sites of major works are opened or when large public resources are deployed for social cohesion emergencies is contrary to resilience. In average cities like Siracusa, it is important for step-by-step policies to be kept constant together with communication and confrontation activities. On the whole, the two cases demonstrate how advisable and opportune it is to adopt resilience approaches: they prove, indeed, to be viable since they do not depend on the amount of funds, but on how carefully such funds are deployed and how flexible the municipal authorities are in determining priorities; within this framework, that can be efficiently referred to as political attention for readiness to risks, municipal authorities aim almost exclusively for an internal confrontation among local powers and a growing external openness – i.e. subsidiarity and cooperation – and, above all, they do not necessarily wait for external aid, or the empowerment of infrastructure provision and knowledge data banks – circumstances that will perhaps never occur together.

7 CONCLUSIONS

The Palermo and Syracuse case studies are different in terms of the types of instruments used and human, financial and organizational quality levels, but there are also similarities as both belong to the same regional

context with its economic, social and environmental crisis. The comparison of policies to increase urban resilience in the social dimension of the Palermo and Syracuse municipalities shows that the ability of local governments depends on their degree of internal cohesion and openness to the cooperation with the available forces for active citizenship. The different experiences of interaction and cooperation between local authorities and agencies providing social services from the private sector, assessed as good practice or as failures, are processes of self-learning. These processes, when and if they develop concretely in the urban dimension, constitute a capital of collective knowledge that public authorities must be able to consider as a basis for building new practices and policies of urban resilience in the social dimension. New policies are needed stimulating local authorities capacity in policies of urban resilience based on interaction within public institutions and private non only in visioning or in participation processes but in the co-creation of social innovation practices and especially in the experience's capitalization of these. Local governments can assist social groups or individuals affected by the social and economic crisis, supporting the launch and development of spontaneous processes of self-determination and self-regulation. The role of innovative technologies and integration with policies for sustainable mobility and energy are no guarantee of success for the initiatives of urban resilience in the social dimension promoted by public institutions.

Ultimately, public authorities that manage to mobilize the forces of active citizenship may abandon policies of urban development primarily dependent on a search for huge public financial resources for high-cost, highly technological infrastructures, whereas these initiatives almost always leave citizens in a position of passive waiting, estrangement or opposition.

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IMAGE SOURCES

Cover image: Gulf of Siracusa and the heart of the Local Communities - elaborated Luigi Minozzi

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