

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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Contents

- 3** EDITORIAL PREFACE
A. Galderisi, K. Firus
- 7** **Adaptation to Climate Change:
Barriers in the Turkish Local Context.**
O. Balaban, M. Senol Balaban
- 23** **Understanding How and Why Cities Engage with Climate Policy:
an Analysis of Local Climate Action in Spain and Italy**
S. De Gregotio Hurtado, M. Olazabal, M. Salvia, F. Pietrapertosa,
E. Olazabal, D. Geneletti, V. D'Alonzo, S. Di Leo, D. Reckien
- 47** **Policies of Resilience in the New Institutional Process .
The Case-Studies of Palermo and Siracusa in the South of Italy**
F. Trapani, L. Minozzi
- 63** **European Cities Dealing with Climate Issues:
Ideas and Tools for a Better Framing of Current Practices**
R. Papa, A. Galderisi, M. Vigo Majello, E. Saretta
- 81** **Smartness and Urban Resilience. A Model of Energy Saving**
C. Gargiulo, F. Zucaro
- 103** **The Potential of Periurban Areas
for the Resilience of Metropolitan Region**
A. Colucci

123 **Public Private Partnerships for Italian Resilient Communities**
P. Pelizzaro

135 **Exploring Issues Limiting the Use of Knowledge in Disaster Risk Reduction**
J. Norton, F. Atun, M. Dandoulaki



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PUBLIC PRIVATE PARTNERSHIPS FOR ITALIAN RESILIENT COMMUNITIES

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ABSTRACT

This article focuses on the role of local institutions in mitigation and adaptation to climate change, considering learning experiences in promoting public-private partnerships in resilient actions. It does so in the belief that climate impacts will affect disadvantaged social groups and small communities more disproportionately, and that local institutions centrally influence how different social groups gain access to, and are able to, use assets and resources. Considering that the increasing awareness that global temperatures will rise, a "Climate-smart" mentality must be adopted at all levels of decision-making. This approach involves finding synergies between climate change mitigation and adaptation, wherever this is possible. We consider similar pre-conditions for adaptation as for mediation. Based on these pre-conditions, we identify Public Private Partnerships as a challenging possibility to finance decentralized renewable energies and green infrastructure for resilient communities. The article aims to demonstrate two main unclear topics in the existing understanding about institutions and climate change responses: the correlation between Public Private Partnerships and the participatory process and how it leads to win-win climate response funding, a learning experience from the Sustainable Energy Action Plan within the MED Programme ZeroCO2 Project - and the Local Adaptation Plan development within the BLUE AP LIFE+ project .

KEYWORDS:

adaptation, mitigation, participatory process, climate change, resilience, risk

1 INTRODUCTION

Nowadays local institutions are essential to build resilient communities in a time of changing climate. It does so in the belief that climate impacts will affect disadvantaged social groups (Kates, 200) and small-communities more disproportionately, and that local institutions exert a centralized influence on how different social groups gain access to, and are able to use, assets and resources (IPCC, 2007a).

Considering the growing awareness that global temperatures will rise, a "Climate-smart" mentality must be adopted at all levels of decision-making. "Climate-smart" is a term that originated in agriculture, to describe actions in the agricultural sector able to increase the resilience of adaptive capacity for climate change and at the same time reduce greenhouse gas emissions (IPCC, 2007b). A "Climate-smart" mentality incorporates the analysis of climate change taking place in the definition of strategies and operational decision-making processes. This approach involves the search for synergies between climate change mitigation and adaptation, wherever possible. What we have learnt from mitigation actions is that climate change is inevitably local and that institutions influence mitigation and climate responses and vulnerability in three critical ways:

- a) Structural impacts and vulnerability
- b) They mediate between individual and collective responses to climate impacts and thereby shape the outcomes of actions
- c) They act as the means of delivery of external resources to facilitate responses, and thus govern access to such resources.

We consider similar pre-conditions for adaptation as for mediation. On the basis of these pre-conditions we identify Public Private Partnerships as a challenging possibility to finance decentralized renewable energies and green infrastructure for resilient communities.

An essential constraint for PPP implementation is the lack of a common European legislative framework. An initial harmonized scheme was produced as part of the Project ZeroCO² MED Programme¹, in order to overcome the existing barriers to PPP in the energy sector. We selected mitigation initiatives using PPP to identify possible investment schemes for adaptation, especially due to the existence of win-win solutions. Taking into consideration the 2013 EU Adaptation Strategies and the attached document, *Adapting infrastructure to climate change*, the PPP scheme was deemed a key tool for financing resilient actions. To do this, a bottom-up approach needs to be adopted in order to identify the actions. As an example for Adaptation purposes, the BLUE AP² LIFE+ project considered the MED ZeroCO² results using a participatory process right from the planning phase, so as to improve private participation.

Based on existing experience, we will now examine two main, but unclear, topics in the existing understanding of institutions and climate change responses: the correlation between Public-Private Partnerships and participatory process, and how it leads to win-win climate response funding, a learning experience from the Sustainable Energy Action Plan and Local Adaptation Plan development.

2 FOSTERING A GREATER ROLE FOR INSTITUTIONAL PARTNERSHIPS IN FACILITATING MITIGATION AND ADAPTATION

Institutional partnerships are crucial to local mitigation practices, as they are for adaptation. If, for mitigation, it is important to ensure the realization of actions such as the Solar Purchase Pool, Hot-Water

¹ Kyoto Club was a partner in the ZERO CO₂ MED Project www.medzeroco2.eu

² Kyoto Club is a partner in the LIFE+Project BLUE AP Bologna Local Urban Environment Adaptation Plan for Resilient City – www.blueap.eu

Heater Purchase Pool, Frame Purchase Pool to mitigate CO² emission in residential private buildings, support for such partnerships can greatly enhance informal institutional processes leading to adaptation. Partnerships among local public and civil society institutions are more closely associated with adaptation practices relating to diversification and communal pooling. Partnerships between private and civil society institutions are relatively uncommon and need greater encouragement. In the context of adaptation practices, they tend to be more closely associated with exchange and are storage based. Mobility, although often neglected in adaptation literature, is essential in dealing with high levels of climate variability.

2.1 SEAP DEVELOPMENT: ZERO CO₂ PARTICIPATORY PROCESS

There were several benefits deriving from the involvement of different stakeholders in the ZeroCO² decision-making process. In very general terms, ZeroCO² engagement improves the likely outcomes of decision-making in small-communities such as the participating municipalities. This improvement is brought about by:

1. Facilitating clear communication and exchange of information, with all parties involved developing a more thorough understanding of issues, potential solutions and alternative perspectives,
2. Improving the effectiveness of decision-making processes, gaining better insight into potential equitable outcomes, solutions to conflicts, and effective planning
3. Strengthening the resources of the groups involved, by increasing awareness, confidence, skills and co-operation,
4. Improving the sustainability of any initiatives, by increasing the quality of decisions and their acceptance by stakeholders.

This list of benefits seems compelling; however the use of engagement is by no means the norm in decision-making processes. There are many reasons for this, but of particular importance is the fact that engagement is intensive in time, resources and skill requirements, and involves giving up a degree of control to people beyond the instigating group or organization, which can threaten the adoption of a preferred outcome.

Some ways of improving the participatory process are also being developed in Foiano della Chiana, where the monitoring and evaluating process calls upon the supporting tools realized by AzeroCO₂ – ESCo - the private partner development strategies in the municipal areas. In this case, Tuscan Regional law n.69 of 27 December 2007 created a legal framework for citizen involvement introducing the obligation to design participatory processes for territorial planning actions such as an Energy Plan, Infrastructure Plan, and Investment Scheme.

2.2 ENHANCING LOCAL INSTITUTIONAL CAPACITIES

Although local institutions play a critical role in supporting mitigation and adaptation, the intensity of adverse future climate impacts is likely to increase – thereby also increasing vulnerability and reducing existing adaptive capacity. External intervention in the form of new information and technology aimed at improving coping capacities, institutional coordination for better articulation (connections among institutions) and improved access (connections between institutions and social groups), and inflows of financial support for local leadership will be critical in strengthening local institutional capacities.

ZeroCO₂ Public Private Partnerships:

The Regional and Provincial partners in the ZeroCO² project are promoting sustainable development and renewable energies through direct lending, changes to legislation, financial incentives, and building and construction regulations and indicators. From the implementation of their Sustainable Development

Strategies, it emerges that PPP – Public Private Partnership - financing is often the appropriate answer to renewable energy investment. In fact PPP models offer a number of benefits, including:

- Risk Reduction - public authorities are able to share the risk of investment with private companies (IPCC, 2012);
- Knowledge - private organizations may have technical expertise that city governments lack, or vice versa;
- A Local Focus - compared with centrally-lead development schemes, Public Private Partnerships are designed for the urban area, employ local actors, and allow local authorities greater freedom and control over service provision;
- Added Social, Political And Economic Benefits - the collaboration of local organizations can encourage civic engagement and job creation in the area (World Bank, 2011).

As a result, they decided to test and improve the existing scheme by means of the MED Programme, involving a number of municipalities in their area. Fourteen municipalities were selected to set-up a Public Private Partnerships model to finance renewable energies and energy efficiencies, testing a variety of forms based on the needs of those involved and the parameters of the national legislation. The diversity of PPPs is also evident through the emergence of Energy Service Companies (ESCOs) and Multi-Utility Service Companies (MUSCOs), organizations composed of public and private partners established to finance, build and manage linked-up energy and utility services in urban areas.

Looking at the Italian PPP set-up case study and the benefit produced by statutory provisions to protect the environment and landscape's infrastructure, while mitigating the environmental risk on the other hand, increases the likelihood of the occurrence of administrative risk. In fact, this risk must be understood as any delay to the project generally due to inefficiency government or the complexity of administrative procedures earmarked for the implementation of the project. In such cases, implementing SEAP will facilitate the creation of an adequate administrative structure as required by the Covenant. Hence, the contracting authorities need to pay particular attention to handling these types of risks during the planning of phase. Italian law has set rules for awarding PPP contracts. This is clear evidence that in PPP projects, the existence of private capital means that greater attention is paid to the environmental risk run by private investors that could result in long delays and increased costs to mitigate the risks and gain consent for implementation of the work a posteriori.

In other words, environmental risk is embodied in any extra cost and delay in implementing the infrastructure due to a lack of identification of the risk of environmental sustainability. Again, monitoring the SEAP indicators for the actions included in the plan could lead to direct testing of the PPP environmental risk index. This means a reduced possibility of partial or total environmental risk to the extent of blocking the execution of the work itself. From the foregoing, it is evident that the environmental risk inherent in PPP projects can be mitigated through a properly controlled organization of the process and the administrative proceedings by all the public bodies involved, as may be guaranteed by implementing SEAP.

Lastly, we indicate some tools for mitigating environmental risk (EEA, 1999) with a view to reducing the occurrence of risk and, therefore, to contain the time and costs of PPP implementation when implementing SEAP:

- a) Implementing comprehensive environmental studies of the territorial framework and infrastructure to be implemented (Baseline Emission Inventory for mitigation responses and Local Climate Impact Profile for adaptation responses),

- b) Preparing feasibility studies. Covenant of Mayors practices for small-communities could improve identification of the works apt to meet the public needs and indicate the technical/financial needs and climate responses. [*The LCIP - Local Climate Impact Profile must also contain the same analysis of the actual state of all components and any intervention in its historical and artistic, architectural and landscape components, and its environmental sustainability, as well as socio-economic, administrative and technical matters, that could be enhanced by down streaming adaptation measures.*]
- c) The participatory process enhances the timely and correct preparation of public works programs through consultation between the institutions with the involvement of citizens in a more realistic identification of the precise location of the intervention, and compensation works, to be determined beforehand during the design phase, are identified in conjunction with the community affected by the project;
- d) Covenant Supportive structures, such as the Province of Massa Carrara for ZeroCO², and the Kyoto Club, as associated Covenant partners, guarantee the involvement of different levels of government to share the benefits arising from the implementation of infrastructure within the participatory process, , and facilitate coordination between the different agencies involved
- e) The Climate Caravan and Information Campaign increase the involvement of citizens (as individuals and/or associates) and the provision of timely and transparent communication between all parties involved
- f) Finally, the pro-active approach of municipal councils to support the *a priori* creation of a social and political consensus.
- g) Sustainable Energy Action Plans with adaptation actions and downstream climate proofing investment for each of the actions identified.

The tools listed are used to properly define the risk that should best be allocated. Generally, given the nature of climate risk and the related difficulties in finding adequate insurance coverage, this form of risk is handled by the contracting authority (Giupponi et al., 2008).

2.3 UNDERSTANDING THE LOCAL INSTITUTIONAL STRUCTURES AND ACCESS PATTERNS BEFORE PROVIDING RESOURCE SUPPORT FOR ANY DEVELOPMENT PROJECT.

Different small communities, social groups and individual households have varying levels of access to existing institutions. Vulnerable groups generally have lower institutional access than those who are more powerful or better off. Before external support for greater adaptive capacity is made available, therefore, an analysis of the nature of institutional linkages and access on the part of different social groups becomes critical. Only after a clear understanding of such relationships has become available should particular institutions be selected as intermediaries for channeling resources.

3. SUPPORTING TERRITORIAL DEVELOPMENT: THE ITALIAN CLIMATE SYNERGIES

Revisiting the issue of governance in the context of the ZeroCO² Project from the local perspective, the practice shows that the various forms of PPPs have proven especially suited to securing economic, social, and community development in the current period showing tendencies for expansion of local governance. Partnerships are considered an effective form of governance, first because they can build collective responsibility for the combined process of activity development, i.e., planning, decision-making, problem solving, project implementation and evaluation.

In many instances they have created networks to share knowledge, resources, and common goals. PPPs (World Bank, 2007) have also served as catalysts for sustainable community dialogue, integrated solutions, and long-term local change. A flexible design and a constant feedback mechanism have largely proven critical to their success. In summary, partnerships can be considered innovative tools in terms of both policy and action because they can account for both (i) the activity and its resolutions and (ii) the implications on the broader community development. However, as the practice indicates, partnerships must be carefully designed and operated to produce efficiency and benefits for all. For the Italian case studies in the context of the ZeroCO² project, the four main actors have played an important role involved in the identification and design of PPP scheme, through a participatory process as indicated in the literature to ensure effective implementation of the scheme.

The actors were: Local Authorities of different institutional levels (Province of Massa Carrara as ZeroCO² partner; Bagnone, Comano and Fivizzano as pilot case Small Communities; the Ministry of Economic Development and the Tuscany Regional Government participated as stakeholders), Citizens, Non-Profit Consultant Agencies (Kyoto Club Service – ZeroCO² partners) Civil Organization (Legambiente – ZeroCO² partners and Legambiente Lunigiana –Environmental Associations as stakeholders), and Private Companies (Local manufacturers and industries as well as AzzeroCO² ESCo – as stakeholders)

3.1 IMPROVING INSTITUTIONAL COORDINATION ACROSS SCALES

Existing national mitigation and adaptation plans in Italy, Spain, Greece and Portugal seem to have paid little attention to the role of local institutions in designing, supporting, and implementing mitigation and adaptation. However, if mitigation can be implemented at national and regional levels, adaptation is inevitably local; there is a great need to involve local institutions more centrally in planning for and implementing adaptation policies and projects (Agrawal, 2008). At the very least, there must be far greater coordination between adaptation policies and measures adopted by institutions and decision-makers at the national level and their counterparts at the local level.

BLUE AP – The Bologna Adaptation Process. Starting from the ZeroCO² toolkit, it is possible to play a pilot role and thus improve and innovate other cities' practices in terms of forms of government, particularly regarding sustainable development and climate change policies. In Southern European countries, and in Italy in particular, it is a strategic need, due to the large number of cities potentially affected by climate change impacts and the large number of cities formally engaged (over 1,000 are signatories to the Covenant of Mayors), but still lacking experience in adaptation strategy development. The Bologna Adaptation Process (BLUE AP) intends to meet these needs, which may be generalized to other European local contexts and the demonstrative character of the process, which could be of interest to an international audience.

The process to be implemented is based on participatory process mitigation responses and aims to demonstrate that:

- 1.A local – comprehensive and integrated – scale analysis and a “tailor made” planning process represent the correct approach to addressing environmental problems generated on a global level, but with a direct local impact (Kaylen et al., 1992);
- 2.Awareness-raising campaigning and a participatory and inclusive dynamic between private and public bodies are the most effective ways to activate local policies to tackle climate change adaptation needs and manage adaptation strategies;
- 3.It is helpful to offer local enterprises and stakeholders coaching support (such as auditing, feasibility analysis, cost assessment, problem-solving actions) in order to start concrete and positive pilot actions leading to the full implementation of local adaptation plans.

PPP schemes are already implemented in the GAIA re-forestation projects, aiming to make industrial areas more resilient to the changing climate.

BLUE AP will also attempt to demonstrate that co-operation and the sharing of responsibilities between public and private sectors can be effective when supported by a mutual, step-by-step management cycle (undertaking commitments, target setting, planning, monitoring, and reporting). In addition, the project demonstrates that local governments engaged in the development of adaptation strategies enhance their urban planning strategies with regard to water management, green areas, health and social services. The benefits of the proposed approach will be shown through the participatory planning process in the Municipality of Bologna and by means of pilot scale applications. Bologna has environmental and economic characteristics that can be compared relatively easily to most Italian and European medium-size cities facing similar climate change effects on urban ecosystems. These characteristics will play a part in developing a common approach easily adaptable to different local conditions (Figueira et al., 2002).

The bottom-up methodology and the on-the-field approach represent strong success factors for the transferability of the system developed and the guidelines that will be drawn up in the light of these experiences.

The BLUE AP Protocol, to structure the Bologna stakeholders' engagement process. The Kyoto Club and Ambiente Italia, with the support of the Municipality of Bologna³, designed the "BLUE AP Protocol for Bologna stakeholder engagement in climate adaptation" (Janssen et al., 2006). The assumptions of the Protocol are that:

- Climate impacts and vulnerabilities are highly context-specific.
- Top down generated plans do not work.
- Adaptation plan implementation requires the activation of a number of differentiated actors.
- Stakeholder engagement is essential, but must be mainly targeted towards groups with the potential to have a direct and proactive role in implementing the Plan actions.

The Protocol aims to clearly structure the process with the scope of increasing stakeholders and decision makers:

1. Clear awareness of climate change dynamics and the degree and nature of vulnerability to climate change. The Local Climate Profile provides a scientific vulnerability assessment, Best Practices Guidelines as a whole, and manages knowledge transfer to stakeholders. Task 2 has been structured to ensure that the information is tailored to stakeholders' needs.
2. Sense of responsibility. A fundamental pre-condition of all engagement is a level of willingness to be involved with the stakeholders. Task 2 provides an overview of the level of willingness and contributes to strengthen it (Surveys and focus groups).
3. Adaptation planning itself requires a capacity for strategic planning, which not all stakeholders possess. Task 2, thanks to peer review and exchanges helps the development of this skill.

Tools to identify Stakeholders' needs and resources (Surveys and District meetings). The aims for stakeholder and community involvement are:

1. To raise awareness of climate change and the need for climate change adaptation.

³ www.kyotoclub.or, www.ambienteitalia.it, www.comune.bologna.it, www.arpa.emr.it/sim/

2. To involve the community of stakeholders in identifying the most appropriate and effective potential responses for the local situation.
3. To develop, together with the stakeholders, the necessary conditions for a start up Plan and its implementation.

The target. The Local Climate Profile provides an extensive information system of particularly vulnerable areas and population sectors. Three major vulnerability groupings have been identified: water management, heat islands and primary industries, enterprises and communities. The main targets of the stakeholders' engagement programme are:

1. Specific Communities, Urban Areas or District Zones which are vulnerable on the basis of their location and social characteristics
2. Single Buildings or Services or associated groups
3. Local agencies responsible for the management of water, energy, green areas, building property, warning and emergency management
4. Business associations and companies, specifically and potentially interested in playing an active role in defending their own properties
5. Associations, experts and non-governmental organizations, committed to climate issues, built up environments and natural environment protection.
6. Local decision-makers.

The Tools, 100 "Stakeholders Challenges" Surveys submitted to private companies and organizations aim to collect objective data and subjective perceptions about vulnerability, risks and local resilience resources. The survey complements the analysis carried out in the context of the Local Climate Profile, but it is directly targeted to the stakeholders listed above. The emerging data will contribute to identifying similarities and differences in stakeholders' perception and to refine the Maps and the overall assessment developed in Action 1.

100 "Financing Challenges" Surveys, delivered to private companies and organizations aim to determine whether, and how, each main stakeholder category can contribute by activating financial opportunities to start up specific adaptation actions able to support the complete implementation of the Local Adaptation Plan. A pooling of potential funding options will be provided to help stakeholders and the Bologna municipality to understand and explore which funding schemes can be activated for their specific situation (PPP model, local loans, revolving funds, EU financing options such as JESSICA and JASPER, and Structural funds). A report on the outcome to present the main results will be prepared.

Series of local or thematic dialogues with stakeholders and financing institutions are under way. Local workshops (2 in each of the 9 District Zones) and thematic focus groups will be organized with the aim to explore more area-specific aspects together with the involved stakeholders and to validate Adaptation Strategy development before formal adoption of the Plan. These workshops will include various actors representing different interests and potential technical and financing solutions.

Workshops and focus groups with stakeholders together with relevant local or regional Green Blue Infrastructures management agencies or building companies and potential funding institutions (e.g. local/regional/national banks) will contribute to starting up Adaptation Plan implementation. The main discussion results will be collected and shared.

Tools to create and mobilize local planning capacity: peer review and good practice exchanges

Peer Review is a process of presenting a project or process to the scrutiny of others who are experts in the same field in order to improve it. The Scientific Board set up by the project will act as peer reviewers (“critical friends”). The work conducted in this Task includes:

1. Preparation of audit and review documentation.
2. Advice from Scientific Board representatives on possible strategy generation or improvements.
3. Enhanced understanding by the Bologna officials and politicians on developing and implementing the Adaptation Plan.
4. Preparation of a list of actions/recommendations that will accelerate and improve the development/implementation of the Bologna Adaptation Plan if implemented.
5. Preparation of a list of suggestions on communication issues (how to obtain consensus, improve visibility, transparency and relations with citizens).
6. Discussion/analysis on the outcome of peer reviews at the partners’ meetings.
7. At least one discussion session with other cities that have already developed an Adaptation Plan and two round tables with climate change adaptation experts involved in EU LIFE+ and other relevant EU adaptation projects. Cities and experts will also be involved in one intermediate public event (Bologna) and in the Final Conference (Rome or Bologna) at which the lessons learned will be made public.

4. FOCUS ON TERRITORIAL DEVELOPMENT STRATEGIES TAKING BOTH VULNERABILITIES AND CAPACITIES INTO ACCOUNT

Actions for improving adaptive capacity in the context of small-communities projects need to attend better to mitigation and adaptation practices facilitated by different forms of external support. The multiple linkages among external interventions and local adaptations can only be understood by focusing on the mediating role and linkages among different institutions in a given territory, and their influence on production and adaptation possibilities (Giupponi, 2006).

ESCo: delivering Win-Win solutions for climate responses

Up to now, ESCo interventions have mainly been considered as mitigation responses to climate change, and the possibility of compensating for CO₂ emissions by setting up “Green Infrastructures” and operating in the carbon voluntary market and white certificate scheme (e.g. Italy, Portugal for ZeroCO₂ country partners) for energy efficiency and renewable energy define a clear role for the ESCo in territorial development and, in these dedicated case studies, for PPP schemes. The ESCo market has been developing over the last 5 or to 10 years, depending on the countries, supporting the exploitation of RES and RUE objectives. Now, adaptation is needed and has to become an attractive prospect for local companies. Adaptation responses as similar characteristics as mitigation, above a list of the key-factors that during the project implementation we observe as crosscutting issue between mitigation and adaptation:

1. Local companies engaged in setting up an Adaptation Plan and climate proof building codes will strengthen their relationship with local government and will create highly dynamic and competitive advantages. This can be compared with SEAP development and implementation; in fact energy efficiency actions are strictly connect to an Energy Plan and Building codes.

2. By demonstrating sensitivity to different social and environmental issues, local companies can also support the wider EU Sustainability Strategy. Indeed, the challenge of this Strategy is to maintain a dynamic that mutually reinforces economic growth, social welfare and environment protection.
3. Local companies need to respond to general market pressures. Thus the possibility of participating in a social partnership network, of accessing know-how and innovative skills, of being supported and guided in the development and implementation of innovative environmental solutions and management instruments, is a significant advantage for companies.
4. Local companies engaged in adaptation practices will gain benefits also in terms of their “positive image” on the market.

5. CONCLUSION: ADOPT AN ADAPTIVE PERSPECTIVE ON INSTITUTIONAL DEVELOPMENT

As climate change and its impacts become more evident, it is increasingly important to integrate concerns for managing risks faced by households and communities into earlier concerns for growth, poverty alleviation, equity, and sustainability. In the Italian ZeroCO₂ experience, the need to integrate climate risk development, like adaptive development, has become a real need after the three extreme floods that occurred during the two-year project. Adaptive development will require local institutions to take on a greater role in the planning and implementation of development projects. While, in the case of mitigation, little is known about the most effective ways institutions can facilitate local mitigation, the situation is even more complicated in the case of adaptation because the blueprints available for developed countries at the moment are still being monitored and can be developed for planning adaptive development. An adaptive perspective on development will require willingness to experiment, the capacity to risk making mistakes (Agraval, Lemos, 2007), and the flexibility to make room for social and institutional learning.

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IMAGE SOURCE

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