THE DISASTER RESILIENCE SCORECARD ASSESSMENT: CASE-STUDIES AND LESSONS LEARNED

City of Centar (North Macedonia)
City of Alba Iulia (Romania)
City of Kruševac (Serbia)

The Province of Potenza Municipalities Communities Network for Resilience

UNDRR ROLE MODEL FOR INCLUSIVE RESILIENCE AND TERRITORIAL SAFETY
2015 COMMUNITY CHAMPION "KNOWLEDGE FOR LIFE" - IDDR2015
EU COVENANT OF MAYORS FOR CLIMATE AND ENERGY COORDINATOR 2016
CITY ALLIANCE BEST PRACTICE "BEYOND SDG11" 2018

PROVINCIA DI POTENZA
Network Comuni-Comunità
Resilienti

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1 EXECUTIVE SUMMARY

A wide range of disasters occur every year in Europe and to be properly faced and managed, actions aimed at strengthening transnational resilience capacities are crucial.

The Sendai Framework for Disaster Risk Reduction (2015-2030) emphasizes the necessity to strengthen competencies, management and implementation capacities at different governance levels as a necessary condition to progress in the reduction of disaster risk and associated loss at global, regional, and local level. The implementation at the local and urban level has been identified as a crucial breaking point for enhanced resilience and human security. The Sendai Framework also calls for a comprehensive approach to building resilient and security of people, including ensuring a comprehensive involvement of all affected, as well as comprehensive risk assessment evaluating all potential risks to an individual, a community, or a state.

New strategies aim for a more holistic approach to disaster risk management while taking into account uncertainties of a changing climate and uncontrolled increased urbanization. The most important aspect of such strategies is, starting from the International Frameworks (Sendai Framework, Agenda 2030, Paris Agreement etc) their adaptability and flexibility in local implementation.

So local authorities which play a central role in developing solutions for decreasing disasters impact, counteract their negative effects, limit recovery costs and safeguard communities, increasingly recognize the need of local resilience and sustainable development strategies based on multi-actor partnerships and engagement.

An effective resilience approach should not only contribute to increasing citizens' capacity to absorb shocks and to cope with stresses, but it will also constitute an opportunity for transformation, in terms of opportunities for capital investments through infrastructure upgrades and improvements, building retrofits for energy efficiency and safety, urban renovation and renewal, cleaner energies, and slum upgrading (resilience dividends).

A strategic tool for pursuing the fixed goals is offered by The "Making Cities Resilient" campaign launched by UNDRR in 2010.

The Campaign addresses issues of local governance and urban risk, as well as on the sustainable urbanizations principles developed in the UN-Habitat World Urban Campaign 2009-2013.

The Campaign, in fact, was devised as effective support to local government officials, really facing with the threat of disasters on a daily basis and needing better access to policies and tools to effectively deal with them.

2 BACKGROUND

Since 2004, the Province of Potenza played a specific role performing DRR policies and actions both in its own institutional duties (provincial roads networks, high schools buildings estate, territorial planning, disaster management and civil protection, etc.) and providing for specific support and coordination to the municipalities in a subsidiary way.

In its DRR policies and activities, the Province of Potenza has set-up a multi-stakeholder and communities path, where institutions and groups representing the different social categories have been involved.

Capitalizing its best governance practices of the last decade, the Province of Potenza outlined the #weResilient strategy for pursuing territorial development through a structural integration of environmental sustainability, territorial safety and climate change contrasting policies.

The outlined strategy meets with an intuition: making Advocacy towards municipalities, relevant stakeholders, major groups and communities for implementing local development policies by integrating them with DRR and territorial and communities Resilience to disasters.

The Province of Potenza has provided and is providing support and cooperation to the municipalities in its territory and beyond (at national and international level), in particular, mainstreaming Sustainable Development policies with Disaster Community Resilience into Urban Planning.

During the Global Platform for Disaster Reduction held in May (2019) in Geneve, the Province engaged itself in a voluntary commitment: it will assist, guide and address in improving their actions aimed at disaster risk reduction and territorial sustainable development other local governments, cities, municipalities and communities that intend to undertake similar improvement paths by benefiting from the experience we have gained over decades of fruitful and successful work.

Partnerships, learning and sharing are highly important within the #weResilient strategy, that is based on the establishment of international/national/local networks and platforms as spaces for discussion and action planning, as well as making partnerships more durable and sustainable.

3 INTRODUCTION: PILOT ACTION

The Voluntary Commitment officially presented during the GPDRR19 is materializing in a structured path within a partnership with the interested cities, materialized in a Pilot Action to be carried out starting with the DDR assessment of the City and, after a sharing and learning ongoing process, drafting a Resilience strategy, as final result.

This pilot action has, as its aim, the improvement in understanding and in capacity to address disaster risks and build resilience at local levels.

In this context the experience of the Province of Potenza of 'Role Model' for Inclusive Resilience and Territorial Safety has been strategic in demonstrating commitment, achievements and good practice in DRR and resilience building to the involved cities in order to help them in identifying key themes and success factors.

Lots of the success factors identified are based to UNDRR's 'Ten Essentials for Making Cities Resilient', suggesting that certain core priorities promote sustainability of resilience building.

Three cities of the international Network, created thanks to the partnership put in place by the Province during the years, have joined this first round of the pilot action: Kruševac in Serbia, Alba Iulia in Romania and Centar in North Macedonia.

The pilot action consists of some steps to be followed by the cities with the support by the Province.

• Dissemination of relevant information about the Sendai Framework for Disaster Risk Reduction (SFDRR) and other global Agendas and related guidance tools with special focus on the Disaster Resilience Scorecard.

• 1/2 days Workshop addressed to the City and its relevant Stakeholder for capacity building and the assessment by the Preliminary Scorecard

• Assistance in the creation of the City's Urban Resilient Strategic Team coordinated by a City's Local Focal Point to be appointed

• a Multi-Stakeholder path that includes:

    a.   detailed workshop on the use of the Detailed Scorecard and on starting the detailed assessment process

    b.   remote assistance to the follow-up of the assessment activities coordinated by the City for concluding the detailed Scorecard assessment. The Detailed Scorecard is fundamental for outlining the Resilience Strategy and undertake adequate planning

• A first draft of the *city resilience and sustainable action plan* carried out as a result of the previous multistakeholder and holistic path.

The aim of this report is to extract the key lessons from the activities put in place so far in assisting cities and local governments to assess their starting point in DRR policies and activities and to identify gaps and progress in addressing local resilience and as first phase in supporting the pilot cities in developing their DRR action plans.

4 KEY-THEMES OF THE EXPERIENCES EXCHANGE

The Province of Potenza guided and was a point of reference for the three involved cities, in particular, in implementing:

- an inclusive approach due to strong community involvement;
- a governance-accountability system that is a powerful mean to the knowledge acquisition and sharing for creating the conditions that contribute to change.

Engaging community in decision-making processes allows governments to tap into wider perspectives and potential solutions to improve decisions, services and actions. At the same time, it provides the basis for productive relationships, improved dialogue, increased sense of belonging and, ultimately, concrete better democracy.

Community-based DRR, Resilience and sustainable development are processes within a community and for the community. It means that inclusive activities and actions may vary from one community to another.

For reducing risk in communities, among other solutions, we need to address the root causes of risks that, for this reason, must be faced through a structural combination of local knowledge and proved expertise. In this way, as a consequence of an improvement process that includes also a targeted community engagement, the need for solutions would become a communities' demand and their search and implementation be leaded by communities themselves (EPICURO DG-ECHO, 2016-2018).

Moreover, DRR and Resilience building are comprehensive and multidisciplinary processes where the role of the governments (at all level) is pivotal for transforming good intentions into actions. So, the governance-accountability system has to be calibrated to include also this fundamental component.

In this way, the Province of Potenza gave its specific support (cognitive, methodological, procedural, also through to the collection and provision of information, good practices and experiences deriving from its transnational networks and relationships) in developing specific local strategies and actions fully integrated into the general outlined framework of local sustainable and resilient development.

5 CITIES' CASE STUDIES

The three cities chosen as case studies in this first round of the pilot action are: Alba Iulia (Romania), Centar (North Macedonia) and Kruševac (Serbia).

ALBA IULIA, Romania

The ancient city of Alba Iulia, located in central Romania, has 63,534 inhabitants (ICLEI 2018). Sustainable development is one of the key priorities of the city municipality, and Alba Iulia has several green initiatives in energy and resource efficiency, including transport (ICLEI 2018). The city has identified flooding as the major challenge to their resilience. The priorities outlined by Alba Iulia to become more resilient include community-led flood resilience action and partnerships; risk-preparedness as part of community planning; increased investment in infrastructure for flood prevention; and stakeholder cooperation across regional, national and global partnerships.

Territory

Alba Iulia (Romanian pronunciation: [‚alba 'juli.a] (About this soundlisten); German: Karlsburg or Carlsburg, formerly Weißenburg, Hungarian: Gyulafehérvár, Latin: Apulum, Ottoman Turkish: Erdel Belgradı or Belgrad-ı Erdel), is a city that serves as the seat of Alba County in the west-central part of Romania. Located on the Mureș River in the historical region of Transylvania, it has a population of 63,536 (as of 2011).

Since the High Middle Ages, the city has been the seat of Transylvania's Roman Catholic diocese. Between 1541 and 1690 it was the capital of the Eastern Hungarian Kingdom and the latter Principality of Transylvania. At one point it also was a center of Eastern Orthodox Metropolitan of Transylvania with suffragan to Vad diocese. Alba Iulia is historically important for Romanians, Hungarians, and Transylvanian Saxons. In December 2018, Alba Iulia was officially declared Capital of the Great Union of Romania.

Economy and productive activities: new actors & new activities replaced the old factories (fire bricks, footwear and carpets) which were symbols of the Communist regime

- 50 years tradition in fine ceramics (& IKEA global provider)

- food industry (nationally dominant in their market segment)

- wood processing (Alba County – one of the most important wood providers in Romania)

- automotive industry (car parts production)

Social composition - Only 47% of the total population is economically active (but above the national average of 45,6%) - 21,7% retired persons - Relatively low unemployment rate: 6,7% (also due to persons working abroad)

DRR Challenges:

1. **Flood resilience through community-driven action and partnerships**

2. **Better preparedness and community planning**

3. **Investments in infrastructure in order to prevent floods**

4. **Developing cooperation across a wide-range of stakeholders and interests, from individuals and communities, to corporations, national government, and global partnerships.**

CENTAR, North Macedonia

Centar is the central municipality of the ten municipalities that compose the city of Skopje, the capital of North Macedonia. Centar is home to the Assembly of North Macedonia.

According to the last national census from 2002, the municipality has 45,412 inhabitants.

[1] Ethnic groups in the municipality include:

Macedonians = 38,778 (85.4%)

Serbs = 2,037 (4.5%)

Albanians = 1,465 (3.2%)

Roma = 974 (2.2%)

others.

Territory

The Vardar River runs on the edge of the municipality along the border with Čair Municipality. Vodno Mountain overlooks Centar. The municipality's total area is 7.52 km2. Centar borders several other municipalities including: Karpoš Municipality to the west, Čair Municipality to the northeast, Aerodrom Municipality to the southeast, and Kisela Voda Municipality to the south.
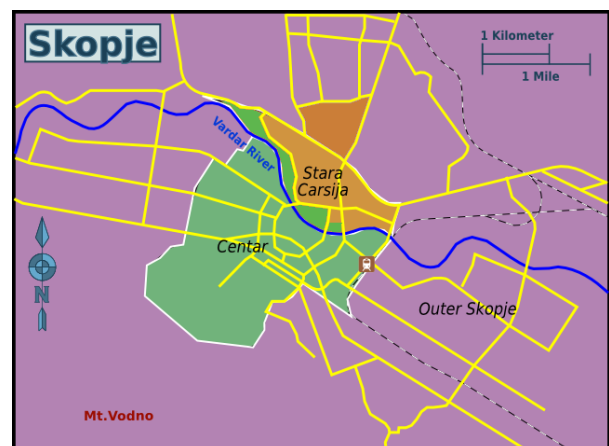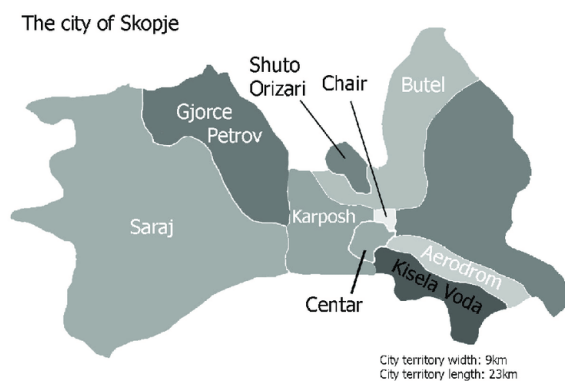
DRR Challenges:

1. **To increase intersectoral cooperation and cooperation within the climate change adaptation actions;**

2. **To implement the measures for contrasting climate change working on different key areas, as follows: energy efficiency, transport, air pollution, water, public health, utility services and public greenery;**

3. **To improve the awareness of all relevant state and non-state stakeholders of local risks and vulnerabilities by strengthening data, skills, and knowledge through meetings, exercises, training. And formal relationships.**

KRUŠEVAC, Serbia

The City of Kruševac covers an area of 854 km², encompassing 101 settlements, 54 community, with over 131,368 inhabitants. The city itself, as an urban area, has the population of 57,847 citizens. Kruševac is the centre of the Rasina Administrative District which includes municipalities of Aleksandrovac, Brus, Varvarin, Trstenik, and Cicevac.

As a town of a rich tradition and several centuries long history, a medieval Serbian capital once, Kruševac of today represents a modern city, economical, administrative, educational, informational, and sports centre significant for the Rasina District and the Republic of Serbia.

Geo-morphological and climatic characteristics:

- Mostly highland area with smaller basins in rivers valleys

- Average altitude is 300m

- Average temperature is 11ºC

- Relative humidity 66-83%

International Cooperation with Cities:

Kruševac, as the only town on the Balkans, is awarded with "Peace Messenger City" and "Peace Medal" and has a longstanding international cooperation with twin cities: - Pistoia, Italy- Trogir, Croatia - Corfu, Greece- Szentendre, Hungary-Kiryat Gat, Israel – Ramniku Valcea, Romania- Bijeljina, Republika Srpska (Bosnia and Herzegovina)- Zalec, Slovenia- Stara Zagora, Bulgaria- Volgograd, Russia

Territory

Kruševac Municipality is situated in the central part of the Republic of Serbia. It covers the most southern part of the Panonian Basin and area between the Panonian Basin and Dinarides in Serbia. It has an area of 854km2, with 101 settlements divided in to 52 local communities and 20 administrative offices. The municipality lies in the valleys of Zapadna Morava, Rasina, Pepeljusa, and Ribare rivers, between Jastrebac, part of Kopaonik, and Zeljin mountains, and partly between the slops of Mojsinje Mountain and Gledic Mountais. Kruševac Municipality borders with Varvarin Municipality on the North, Cicevac and Razanj municipalities on the North-East, Aleksinac municipality on the East, municipalities of Prokuplje and Blace on the South side, and Brus, Aleksandrovac, and Trstenilk municipalities on the South-West and the West side. According to census from 2002, this area has the population of 137,371 inhabitants. Kruševac Municipality is the centre of the Rasina Administrative District that also includes municipalities of Aleksandrovac, Brus, Varvarin, Trstenik I Cicevac.

Kruševac lies in Kruševac Basin that encompasses composite valley of the Zapadna Morava River, and between Levča and Temnic on the North, Zupa, Kopaonik, and Jastrebac on the South, Kraljevo Basin and the valley of the Ibar River on the West. Kruševac Municipality covers an area of 854 km2. The city is located at 43.58° North and 21.32° East geographical coordinates.

Natural Resources:

Forests cover approximately 35% of the City's area. The largest forests are on the Jastrebac Mountain which is the most forested mountain in the whole Balkans.

The territory of Kruševac is also known for its significant mineral and geo-thermal springs (Bela Voda, Ribarska Banja, Lomnica, Zabare, Čitluk).

Construction material (pebble, sand, and stone) can be found in river valleys, and Bela Voda is famous for its high quality sandstone.

DRR Challenges:

1. **To improve governance, institutional capacity and cooperation in DRR policies and activities;**

2. **To increase Infrastructure Resilience;**

3. **To reinforce the Civil Protection Structure;**

4. **To improve the awareness of all relevant stakeholders of local risks and vulnerabilities by strengthening data, skills, and knowledge through meetings, exercises, training and formal relationships;**

5. **To implement the measures for contrasting climate change based on ecosystem services, in particular green and blue infrastructures.**

6 SCORECARD IMPLEMENTATION: PROCESS/METHODOLOGY

The Scorecard provides for a set" of assessments that will allow local governments to assess their disaster resilience, structuring around UNDRR's Ten Essentials for Making Cities Resilient. It also helps to monitor and review progress and challenges in the implementation of the Sendai Framework for Disaster Risk Reduction: 2015-2030.

For this first step of the pilot action the scorecard of preliminary level has been applied.

The tool, responding to key Sendai Framework targets and indicators, and with some critical sub-questions. In total there are 47 questions indicators, each with a 0 – 3 score

While the Scorecard aims to be systematic, individual scores may unavoidably be subjective and so, in order to solve this critical issue, the Province of Potenza, also thanks to its experience in supporting its 100 municipalities and the other cities in the assessment process helped the three cities to be very rational and judicious in deciding which scores apply most closely to their level of disaster resilience, pushing them to record justification for each evaluation score

The method applied took into account the different context of the three city based on workshops involved a conceptual introduction to familiarize with the key technical concepts, to develop a common language, and to raise awareness of participants to the scorecard and the 10 Essentials for Making Cities Resilient.

First of all, partners prepared a list of relevant stakeholders from various governmental departments to academic institutions, NGOs, the private sector, and community groups and civil society organizations to involve (and eventually invite) to become members of a sort of Urban Resilience strategic teams (Epicuro DG Echo Project); the final composition has a central homogeneous core plus a flexible part that varied from a city to the other, depending on local community features and operators.

Disaster risk reduction and building resilience, in fact, needs to be a collaborative effort. Some aspects of disaster resilience may not be under the control of local governments (for example, the city's electricity supply or phone system may be operated by a separate agency or private utility, or there may be a provincial or neighbouring government that also needs to be involved).

The Scorecards were completed in consultation with these other organizations.

Obviously, another important issue was to understand and analize the cities' hazards and risks. Specifically to identify "most probable" and "most severe" risk scenarios for each of the identified hazards, or for a potential multi-hazard event.

Factually the assessment process, first step of the pilot, was based on workshops with the key representatives of the designed strategic teams. However, the methodology applied has

been characterized by a high level of flexibly that enables the process to be very well tailored on the single city.

In the case of Alba Iulia, the scorecard assessment task started with some ad hoc training events given by the Province during the Epicuro Project_DG ECHO (http://www.epicurocp.eu). The multisectorial team, on the basis of the lessons learned and knowledge gained, started the raising awareness activities with all the key-stakeholders involved in the preliminary level scorecard.

Finally, in December a workshop was held in order to finalize the first level assessment, with the remotely assistance by the Province of Potenza.

Fig. 1 Training event held by the Province of Potenza during Epicuro Project

Fig. 2 Workshop in Alba Iulia

In the case of Centar, the scorecard assessment task started with a training event with the involved key-stakeholders from in order to guarantee that these different actors could dispose of the same basic knowledge and could share a common language and how territorial actors can contribute to increase resilience in the urban environment.

Fig. 3 Training event held by the Province of Potenza in Centar

After this event, the local strategic team went on with awareness rising initiatives with the other stakeholders and in December a workshop was held in order to deliver the preliminary scorecard with the remote assistance by the Province of Potenza.

Fig. 4 Workshop in Centar

In the case of Kruševac, firstly the Province of Potenza offered a remote helpdesk to the City and the involved key-stakeholders in order to provide them with the key technical concepts, to develop a common language, and to raise awareness.

This first assessment process was concluded with a workshop held in Kruševac in December, with the participation and support by the Province of Potenza.
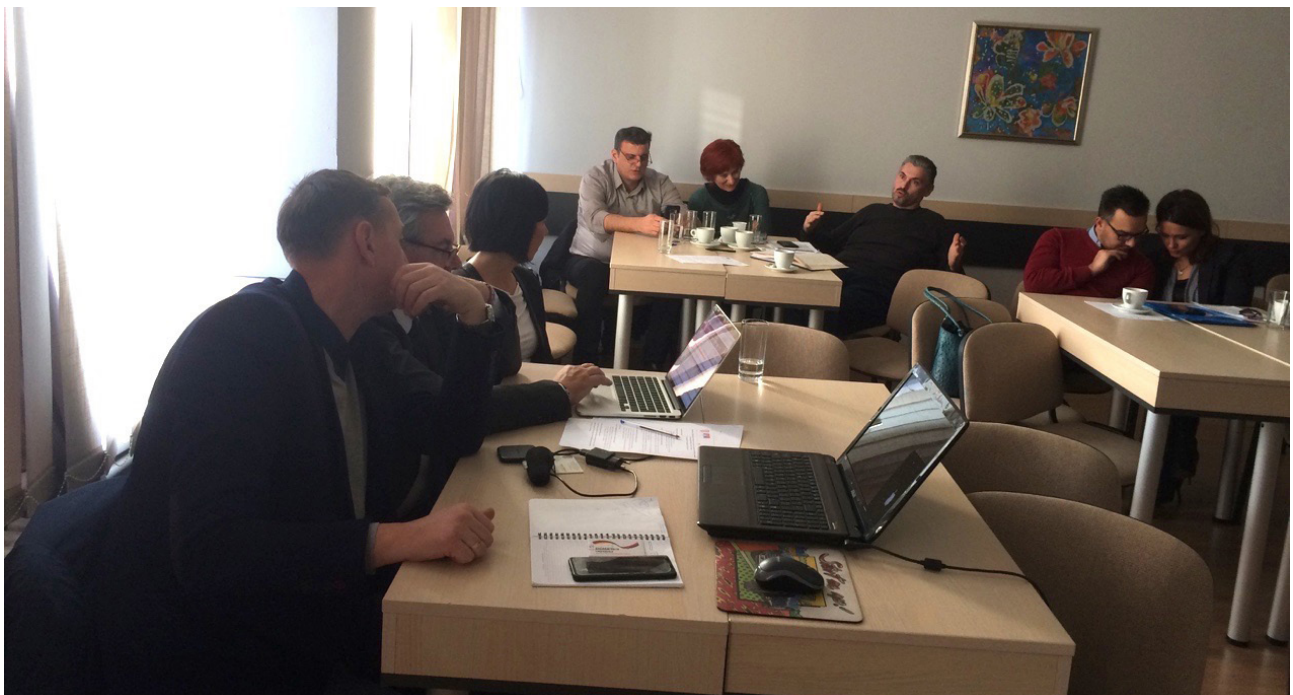

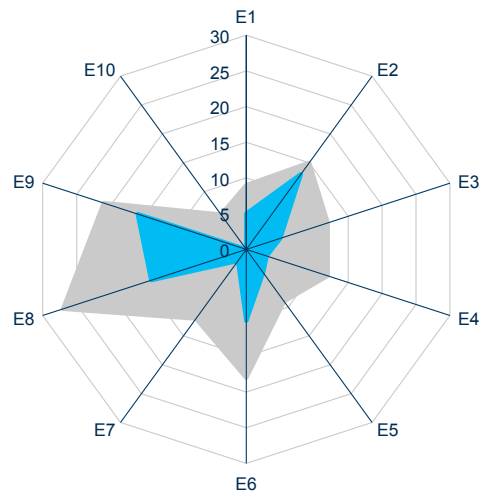Fig. 5 Workshop in Kruševac

Fig. 6 Workshop in Kruševac

7 RESULTS

The results had been collected and verified stakeholders during the workshops, an important step in validating the evidence and stimulating DRR action planning.
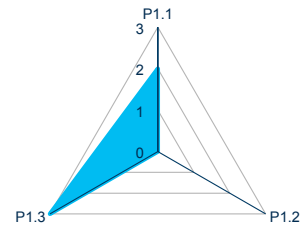
Alba Iulia

Romania

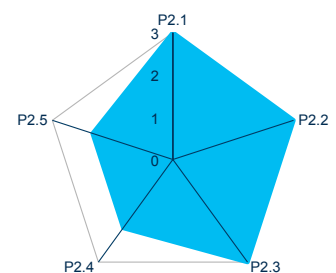20 December 2019

The overall score for this assessment is 72 / 141

Essential 01: Organize for Resilience

P1.1	Does the City master plan (or relevant strategy/plan) adopt the Sendai Framework?	2
P1.2	Is there a multi-agency/sectoral mechanism with appropriate authority and resources to address disaster risk reduction?	0
P1.3	Is resilience properly integrated with other key city functions / portfolios?	3

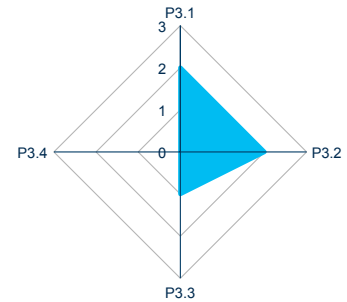**Essential 02: Identify, Understand and Use Current and Future Risk Scenarios**

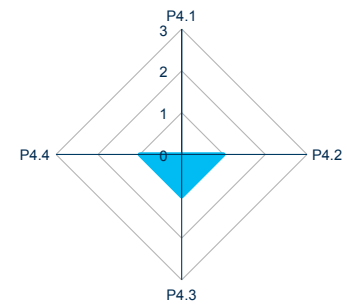| P2.1	Does the city have knowledge of the key hazards that the city faces, and their likelihood of occurrence?	3
P2.2	Is there a shared understanding of risks between the city and various utility providers and other regional and national agencies that have a role in managing infrastructure such as power, water, roads and trains, of the points of stress on the system and city scale risks?	3
P2.3	Are their agreed scenarios setting out city-wide exposure and vulnerability from each hazard, or groups of hazards (see above)?	3
P2.4	Is there a collective understanding of potentially cascading failures between different city and infrastructure systems, under different scenarios?	2
P2.5	Do clear hazard maps and data on risk exist? Are these regularly updated?	2

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Essential 03: Strengthen Financial Capacity for Resilience

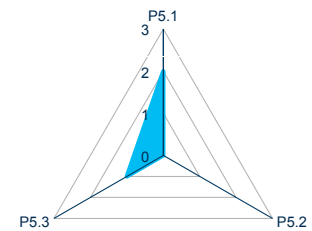| P3.1	The city / lead agencies understand all sources of funding, and the "resilience dividends", are well connected, understand all available routes to attract external funding and are actively pursuing funds for major resilience investments.	2
P3.2	Does the city have in place a specific 'ring fenced' (protected) budget, the necessary resources and contingency fund arrangements for local disaster risk reduction (mitigation, prevention, response and recovery)?	2
P3.3	What level of insurance cover exists in the city, across all sectors – business and community?	1
P3.4	What incentives exist for different sectors and segments of business and society to support resilience building?	0

Essential 04: Pursue Resilient Urban Development

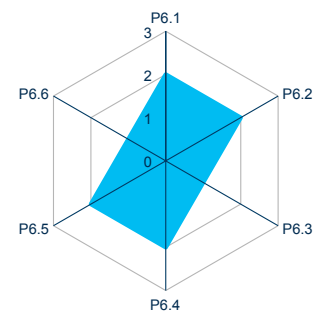| P4.1	Is the city appropriately zoned considering, for example, the impact from key risk scenarios on economic activity, agricultural production, and population centres?	0
P4.2	Are approaches promoted through the design and development of new urban development to promote resilience?	1
P4.3	Do building codes or standards exist, and do they address specific known hazards and risks for the city? Are these standards regularly updated?	1
P4.4	Are zoning rules, building codes and standards widely applied, properly enforced and verified?	1

Essential 05: Safeguard Natural Buffers to Enhance the Protective Functions Offered by Natural Ecosystems

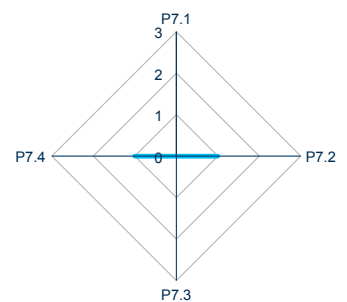| P5.1	Beyond just an awareness of the natural assets, does the city understand the functions (or services) that this natural capital provides for the city?	2
P5.2	Is green and blue infrastructure being promoted on major urban development and infrastructure projects through policy?	0
P5.3	Is the city aware of ecosystem services being provided to the city from natural capital beyond its administrative borders? Are agreements in place with neighbouring administrations to support the protection and management of these assets?	1

Essential 06: Strengthen Institutional Capacity for Resilience

P6.1	Does the city have clear access to all the skills and experience it believes it would need to respond to reduce risks and respond to identified disaster scenarios?	2
P6.2	Does a co-ordinated public relations and education campaign exist, with structured messaging and channels to ensure hazard, risk and disaster information (that can be understood and used) are properly disseminated to the public?	2
P6.3	Extent to which data on the city's resilience context is shared with other organizations involved with the city's resilience.	1
P6.4	Are there training courses covering risk and resilience issues offered to all sectors of the city including government, business, NGOs and community?	2
P6.5	Are training materials available in the majority of languages in common use in the city?	2
P6.6	Is the city proactively seeking to exchange knowledge and learn from other cities facing similar challenges?	1

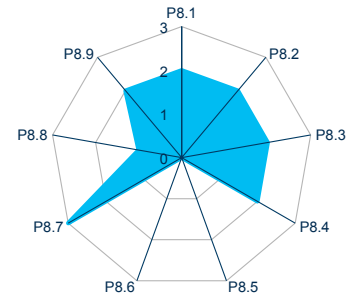**Essential 07: Understand and Strengthen Societal Capacity for Resilience**

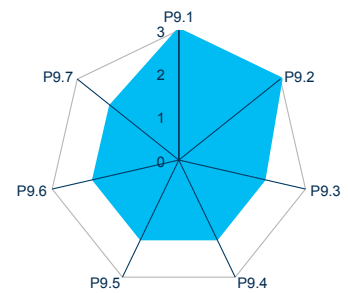| P7.1	Are "grassroots" or community organizations participating in risk reduction and post-event response for each neighbourhood in the city?	0
P7.2	Are there regular training programmes provided to the most vulnerable populations in the city?	1
P7.3	What proportion of businesses have a documented business continuity plan that has been reviewed within the last 18 months?	0
P7.4	How effective is the city at citizen engagement and communications in relation to DRR?	1

Essential 08: Increase Infrastructure Resilience

|		
P8.1	Is critical infrastructure resilience a city priority, does the city own and implement a critical infrastructure plan or strategy?	2
P8.2	Is existing protective infrastructure well-designed and well-built based on risk information?	2
P8.3	Would a significant loss of service for these two essential services be expected for a significant proportion of the city under the agreed disaster scenarios?	2
P8.4	Would a significant loss of service be expected for a significant proportion of the city in the 'worst case' scenario event? In the event of failure would energy infrastructure corridors remain safe (i.e. free from risk of leaks, electrocution hazards etc.)?	2
P8.5	Would a significant loss of service be expected for a significant proportion of the city in the 'worst case' scenario event? In the event of failure would transport infrastructure corridors remain safe (i.e. free from risk of flood, shocks etc) and passable?	0
P8.6	Would a significant loss of service be expected for a significant proportion of the city in the 'worst case' scenario event?	0
P8.7	Would there be sufficient acute healthcare capabilities to deal with expected major injuries in 'worst case' scenario?	3
P8.8	% of education structures at risk of damage from "most probable" and "most severe" scenarios	1
P8.9	Will there be sufficient first responder equipment, with military or civilian back up as required?	2

Essential 09: Ensure Effective Disaster Response

P9.1	Does the city have a plan or standard operating procedure to act on early warnings and forecasts? What proportion of the population is reachable by early warning system?	3
P9.2	Is there a disaster management / preparedness / emergency response plan outlining city mitigation, preparedness and response to local emergencies?	3
P9.3	Does the responsible disaster management authority have sufficient staffing capacity to support first responder duties in surge event scenario?	2
P9.4	Are equipment and supply needs, as well as the availability of equipment, clearly defined?	2
P9.5	Would the city be able to continue to feed and shelter its population post-event?	2
P9.6	Is there an emergency operations centre, with participation from all agencies, automating standard operating procedures specifically designed to deal with "most probable" and "most severe" scenarios?	2
P9.7	Do practices and drills involve both the public and professionals?	2

Essential 10: Expedite Recovery and Build Back Better

|		
P10.1	Is there a strategy or process in place for post-event recovery and reconstruction, including economic reboot, societal aspects etc.?	0
P10.2	Do post-event assessment processes incorporate failure analyses and the ability to capture lessons learned that then feed into design and delivery of rebuilding projects?	0

30/12/19

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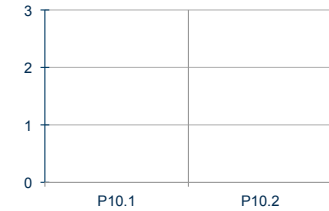
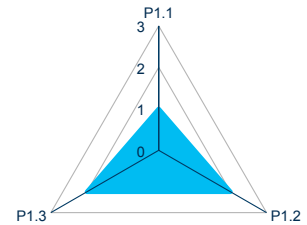**Municipality of Centar**

North Macedonia

17 December 2019

The overall score for this assessment is 69 / 141

Please send the completed tool and PDF report to: isdr-campaign@un.org

Disaster Resilience Scorecard for Cities - Preliminary Level Assessment Tool, v.1.0.
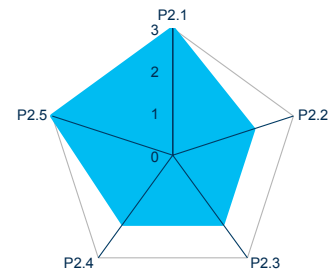
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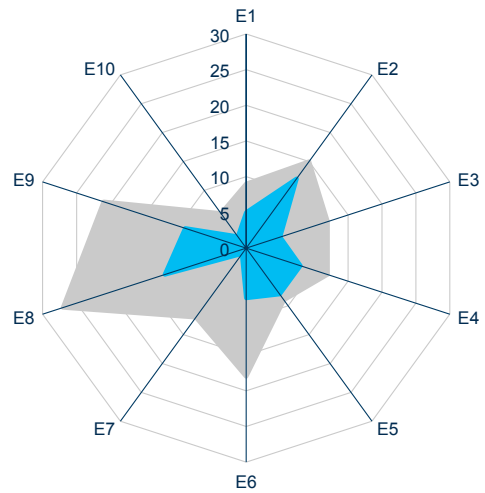
Essential 01: Organize for Resilience

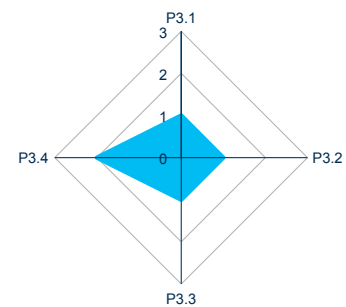|		
P1.1	Does the City master plan (or relevant strategy/plan) adopt the Sendai Framework?	1
P1.2	Is there a multi-agency/sectoral mechanism with appropriate authority and resources to address disaster risk reduction?	2
P1.3	Is resilience properly integrated with other key city functions / portfolios?	2

Essential 02: Identify, Understand and Use Current and Future Risk Scenarios

P2.1	Does the city have knowledge of the key hazards that the city faces, and their likelihood of occurrence?	3
P2.2	Is there a shared understanding of risks between the city and various utility providers and other regional and national agencies that have a role in managing infrastructure such as power, water, roads and trains, of the points of stress on the system and city scale risks?	2
P2.3	Are their agreed scenarios setting out city-wide exposure and vulnerability from each hazard, or groups of hazards (see above)?	2
P2.4	Is there a collective understanding of potentially cascading failures between different city and infrastructure systems, under different scenarios?	2
P2.5	Do clear hazard maps and data on risk exist? Are these regularly updated?	3

Essential 03: Strengthen Financial Capacity for Resilience

P3.1	The city / lead agencies understand all sources of funding, and the "resilience dividends", are well connected, understand all available routes to attract external funding and are actively pursuing funds for major resilience investments.	1
P3.2	Does the city have in place a specific 'ring fenced' (protected) budget, the necessary resources and contingency fund arrangements for local disaster risk reduction (mitigation, prevention, response and recovery)?	1
P3.3	What level of insurance cover exists in the city, across all sectors – business and community?	1
P3.4	What incentives exist for different sectors and segments of business and society to support resilience building?	2

Essential 04: Pursue Resilient Urban Development

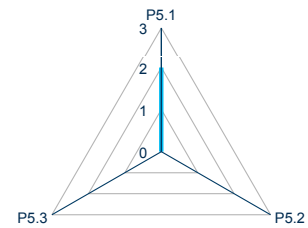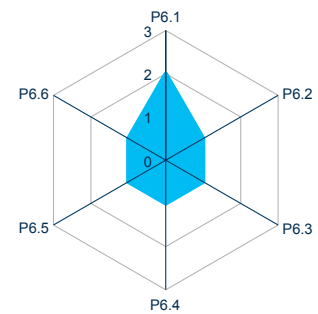|		
P4.1	Is the city appropriately zoned considering, for example, the impact from key risk scenarios on economic activity, agricultural production, and population centres?	2
P4.2	Are approaches promoted through the design and development of new urban development to promote resilience?	2
P4.3	Do building codes or standards exist, and do they address specific known hazards and risks for the city? Are these standards regularly updated?	2
P4.4	Are zoning rules, building codes and standards widely applied, properly enforced and verified?	2

Essential 05: Safeguard Natural Buffers to Enhance the Protective Functions Offered by Natural Ecosystems

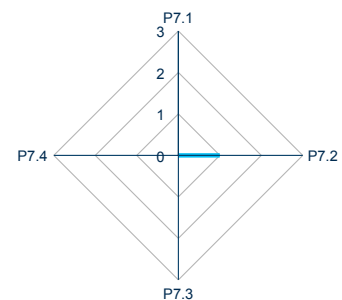|		
P5.1	Beyond just an awareness of the natural assets, does the city understand the functions (or services) that this natural capital provides for the city?	2
P5.2	Is green and blue infrastructure being promoted on major urban development and infrastructure projects through policy?	0
P5.3	Is the city aware of ecosystem services being provided to the city from natural capital beyond its administrative borders? Are agreements in place with neighbouring administrations to support the protection and management of these assets?	0

Essential 06: Strengthen Institutional Capacity for Resilience

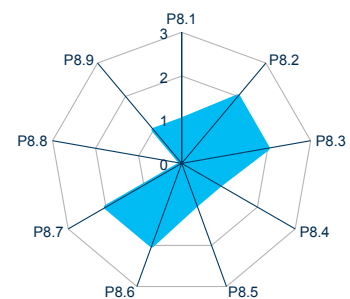|		
P6.1	Does the city have clear access to all the skills and experience it believes it would need to respond to reduce risks and respond to identified disaster scenarios?	2
P6.2	Does a co-ordinated public relations and education campaign exist, with structured messaging and channels to ensure hazard, risk and disaster information (that can be understood and used) are properly disseminated to the public?	1
P6.3	Extent to which data on the city's resilience context is shared with other organizations involved with the city's resilience.	1
P6.4	Are there training courses covering risk and resilience issues offered to all sectors of the city including government, business, NGOs and community?	1
P6.5	Are training materials available in the majority of languages in common use in the city?	1
P6.6	Is the city proactively seeking to exchange knowledge and learn from other cities facing similar challenges?	1

Essential 07: Understand and Strengthen Societal Capacity for Resilience

P7.1	Are "grassroots" or community organizations participating in risk reduction and post-event response for each neighbourhood in the city?	0
P7.2	Are there regular training programmes provided to the most vulnerable populations in the city?	1
P7.3	What proportion of businesses have a documented business continuity plan that has been reviewed within the last 18 months?	0
P7.4	How effective is the city at citizen engagement and communications in relation to DRR?	0

Essential 08: Increase Infrastructure Resilience

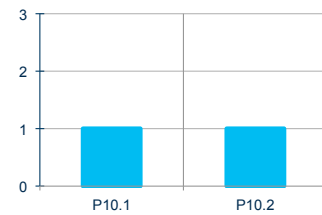|		
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P8.7	Would there be sufficient acute healthcare capabilities to deal with expected major injuries in 'worst case' scenario?	2
P8.8	% of education structures at risk of damage from "most probable" and "most severe" scenarios	0
P8.9	Will there be sufficient first responder equipment, with military or civilian back up as required?	1

Essential 09: Ensure Effective Disaster Response

P9.1	Does the city have a plan or standard operating procedure to act on early warnings and forecasts? What proportion of the population is reachable by early warning system?	0
P9.2	Is there a disaster management / preparedness / emergency response plan outlining city mitigation, preparedness and response to local emergencies?	2
P9.3	Does the responsible disaster management authority have sufficient staffing capacity to support first responder duties in surge event scenario?	2
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P9.5	Would the city be able to continue to feed and shelter its population post-event?	0
P9.6	Is there an emergency operations centre, with participation from all agencies, automating standard operating procedures specifically designed to deal with "most probable" and "most severe" scenarios?	2
P9.7	Do practices and drills involve both the public and professionals?	2

Essential 10: Expedite Recovery and Build Back Better

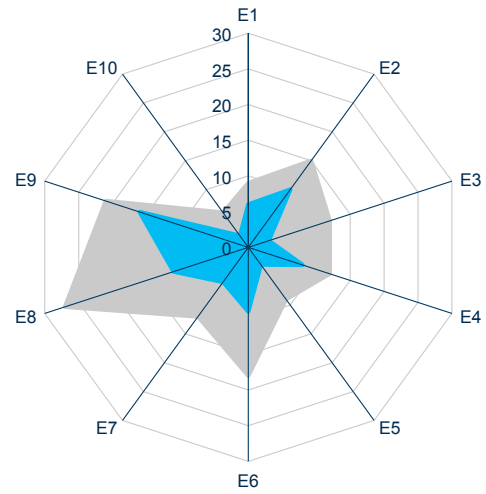|		
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30/12/19

Municipality of Kruševac

Serbia

16 December 2019

The overall score for this assessment is 74 / 141

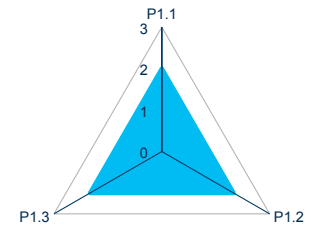Please send the completed tool and PDF report to: isdr-campaign@un.org

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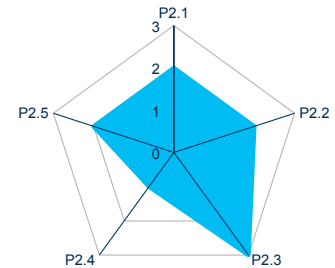**Essential 01: Organize for Resilience**

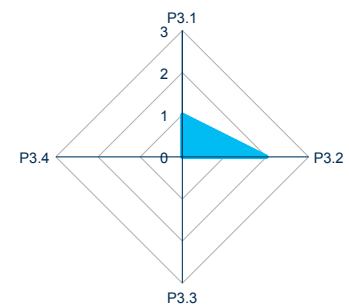|		
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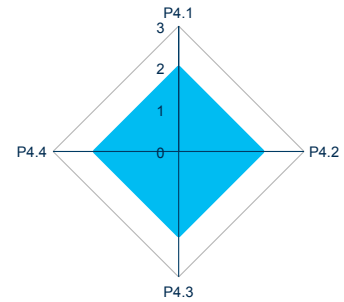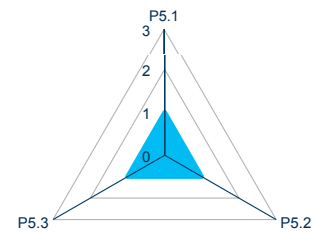|		
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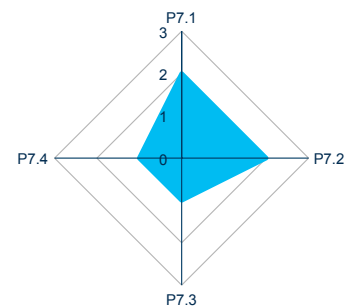|		
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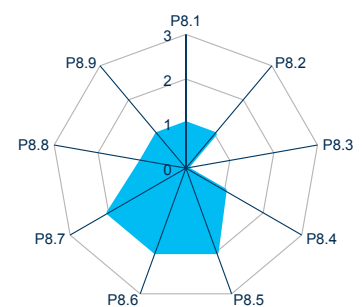|		
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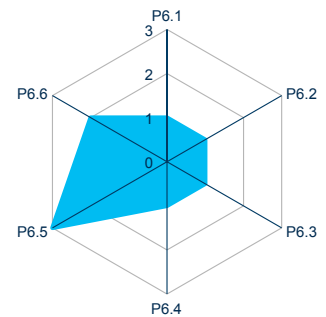
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P10.1	Is there a strategy or process in place for post-event recovery and reconstruction, including economic reboot, societal aspects etc.?	1
P10.2	Do post-event assessment processes incorporate failure analyses and the ability to capture lessons learned that then feed into design and delivery of rebuilding projects?	1

8 FINDINGS OF THE SCORECARD ASSESSMENT: MAIN GAPS AND CHALLENGES AS INPUTS OF THE RESILIENCE STRATEGIES

The main results in terms of Challenges (Gaps/Barriers) existing at the urban level are provided by the following bullet-points summary.

Together with the Scorecard assessment outputs, they will be the guiding principles for building up the new Resilience strategies in dedicated joint paths

- **CENTAR, NORTH MACEDONIA**:
  o   need for a real all sectors cross-cutting resilience strategy;
  o   need for more work on implementation of scenarios at municipal level and further studies on cascading impacts;
  o   need for more financial resources to be allocated to DRR and related Resilience implementation actions;
  o   need for structurally including Resilience in urban planning and finding concrete solutions for the compliance of the already exiting zones with the resilience needs and 'standards';
  o   boosting community (in particular vulnerable categories and private sector) and stakeholder' involvement and enhancing skills in DRR;
  o   devoting strong attention on critical infrastructures as integrant part of the resilience strategy;
  o   improvement in the disaster response phase, in early warning systems and clear definition of equipment and supply needs;
  o   devoting substantial parts of the strategy to the post-event recovery and reconstruction.

- **ALBA IULIA, ROMANIA:**
  o   need for a real all-sectors cross-cutting resilience strategy and for a DRR multiagency mechanism;
  o   need for investigation on cascading effects;
  o   providing incentives and insurance products for DRR;
  o   devoting more attention to an urban development really addressed to resilience and DRR issues;

- o devoting more attention on green infrastructures development (also in accordance with the neighbouring entities), taking into accounts that already exist the political willing and the community awareness on this issue;

- o need for more integration and shared databases among the organizations involved in DRR process;

- o boosting concrete community involvement in all DRR phases;

- o devoting more attention on some 'critical' services;

- o devoting substantial parts of the strategy to the post-event recovery and reconstruction.

- ● **KRUŠEVAC, SERBIA**:
  - o need for a real all-sectors cross-cutting resilience strategy;

  - o need for investigation on cascading effects;

  - o need for more financial resources to be allocated to DRR and related Resilience implementation actions;

  - o devoting more attention on green infrastructures development (also in accordance with the neighbouring administrations), taking into accounts that already exist the political willing and the community awareness on this issue;

  - o enhancing skills, public awareness and data sharing process in DRR;

  - o putting great attention on critical infrastructures as integrant part of the resilience strategy;

  - o devoting substantial parts of the strategy to the post-event recovery and reconstruction.

9 OPPORTUNITIES AND CHALLENGES: LESSON LEARNED AND MOVING FORWARD TO DRR ACTION PLANNING

Besides the evaluation process itself, the Scorecard Assessment is a good entry point to start engaging with cities and various stakeholders on DRR.

The Scorecard provides immediate results and outputs from which new developmant activities can be created: it helps in allowing co-ordination of DRR efforts among stakeholders to be simplified; also, it gives an overall picture of the DRR process and has the potential to provide support for longer-term progress monitoring, establishing a baseline measurement.

In all the three case-studies, the tool gave the opportunity for stimulating many discussions, ranging from understanding risks to examinating many priorities for investment and action, based on a shared understanding of the Disaster Resilience state of the art.

By converse, starting from the baseline individuated thanks to this preliminary risk assessment exercise and then enriched by means of the detailed scorecards, scheduled within the pilot action, Local Governments will be able to develop their local Resilient and Sustainable Strategies in line with the target E of SFDRR.

According to the experience in performing the Socrecard Assessment as metodologically proposed and run-out by the Province of Potenza, the major lessons learned to be further capitalized in the development of the Resilience Strategies and relates Action Planning are related to:

- Investigating and improving *technical analysis*: understanding and assessing Risks;
- Accessing and *mobilizing finance* for urban/territorial DRM and resilience;
- Leveraging *political will* and *public support*;
- Rising *social and community's awareness*;
- Achieving *Resilience* as a step-by-step building strategic process: building Local Resilience Action Plans (LRAP) as a combination of the above elements to be merged, elaborated and implmenented with a dynamic strategy and methodology.

As mere examples of brainstorming prior to the forthcoming strategic pats, some considerations that integrate the Sorecard Assessments outputs and that will be elaborated for the definition of the Resilience Strategies and planning are reported as follows. They represent a simple snap-shot of the fit-for-purpose suit the Province of Potenza is able to provide to Cities/Governemnts at all levels and derived from the experience gained in a multi-year Resilience building process that ranges from DRM/DRR to many sectoral institutional duties and achievements framed into a "wide-area" holistic vision.

Challenges in terms of resources and skills

In terms of accessing and leveraging *financial* resources, new challenges come from the private sector. Territorial/urban governance policies should foresee "to attract" private investment for enhancing the safety. Other challenges could be the application of environmental compensation measures for high impact interventions or, alternatively, of tax reductions in case of no-impacting or resilient ones. Moreover, the rise of the risk awareness will result in the increase of the demand of more qualitative interventions on the territory with new investments by the business sector; similarly the increase of the applied scientific research's involvement in the experimentation of new techniques, the increase of skills and capacities and, generally, the possibility to create new jobs and opportunities. This could be a virtuous circle that could enhance the quality of life and resilience of cities and their communities.

Challenges in terms of data availability (understanding risks and territorial/urban frameworks)

In terms of data availability new challenges could be the collection, the organization and publication of all the existing information for public free consultation and use. The experience showed a disaggregation of the information and of the knowledge because of some restraint in data dissemination by the owners, even if they are public institutions. There is a lack of organization of databases, sometimes the existence of some information is not known. For this reason, in territorial planning activities, the Province of Potenza is working on the collection and systematization of all the available data for territorial analysis and making them accessible by all the interested stakeholders. More incisive interventions are expected by the national/regional authorities.

Challenges in terms of public support and political will

The role of community in Risk Assessment should be more participatory. The increase of awareness of risks is possible also with the direct involvement of communities. Now a lot of simplified tools have been produced for providing the risk assessment activity to be understood and participated by all. The hazard mapping is important in this participatory process because is the simplest way to understand and disseminate information. The experience in performing some risk-awareness projects in the schools resulted as a sort of preferential path also for the involvement of the families. The best organizations for enhancing community engagement should be founded mainly on voluntary associations who play important role also in disaster management. The public must maintain the institutional role of improving - with specific actions performed day-by-day - the local civil protection system assuring the involvement of all the local actors and stakeholders. In this way all the actors of the local community will be fully involved and act together for increasing resilience.

Challenges in terms of scenario building and future growth

The experience shows that good results in collecting information on vulnerability of building stocks (mostly residential and of main infrastructures) all over the territory must be assured. It can be reached by advantaging, for example, of the results of specific on-site surveys that would give a more accurate picture of the situation. This collection shuold been performed with the contribution of the different Institutions and agencies in a complex multi-stakeholder process and could imply also years of investigation and big investments in terms of both money and skilled human resources. The accurate characterization of the

territory is a very complex and never-ending activity involving different components (built environment, population, social, economic, etc. elements) sometimes difficult to model and requiring investments of big quantity of resources. The major challenges for the future come from the main consideration that for disaster management and, of course, urban planning purposes, the availability of data sometimes is more important that its accuracy. The scale of intervention of these planning activities allows to waive the accuracy and the punctual information for a more extensive but effective information that plays its full role of increasing the knowledge about territorial issues. For these reasons, an approach based on probabilistic scenarios could fit best for the territorial planning purposes. Now, it is possible to take advantage of the progresses of science and of technology that give the possibility to experiment new techniques in territorial data collection (remote sensing, aerial images, etc) that have reached a high level accessibility with low or even no costs. Also the possibility of using open source tools makes the risk assessment an activity that can performed in the ordinary.

Challenges in terms of rising communities' awareness

More emphasis has to be put to another activity to be performed when working on resilience in urban planning policies: the socio-cultural aspect, i.e. the raise of awareness of the communities. Civil society is composed by a variety of communities: each of them will suffer injury form disaster and, for this reason, could reverberate on the others affecting the response (and the resilience) of the entire social system. The Local Resilience Action Plan (LRAP) process has to face all these different communities, each related to different groups of stakeholders which, for the above reasons, will have different grades of involvement in risk reduction. When talking about a LRAP, these communities should be aware of their role and involvement in DRR so they could become a proactive part in the process. Furthermore, fundamental is also the involvement of the population (divided into different social communities). Also population should be an active part of the process, not acting only as the final recipient of the LRAP implementation policies. Its involvement also in the elaboration phases could be strategic both for calibration and for the success of the LRAP.

The action should be accompanied also by a strong push from the communities in requesting more territorial/urban safety. One of the best way to convince the policy makers to adopts some actions is to act from the bottom. The policy maker needs consensus from the citizens and, in this case, the citizens could be most effective in "convincing" the politics in adopting some tangible actions towards local risk reduction. So, it is worth working on increasing communities' awareness in risks and disasters so to let them act with a very incisive (let's say "popular") force versus their political representatives and decision makers asking for more tangible actions in this direction. In this way also financial resources' search and allocation for risk-reduction could be increased.

The worldwide experience tells that the main problem could be that investing in DRR is commonly not visible both in terms of time and of actions in an ordinary government mandate term (4-5 years). Paradoxically, the most effective the investment on DRR/Resilience the most invisible are its effects! When a disaster occurs, public opinion is more attracted by the failure of the absorption mechanism that from its success.

So, paradoxically, the investments seem to be more effective (because of their visibility) if they are provided for relief, recovery and reconstruction. In this case, a disaster could be a good occasion to demonstrate how efficient could be the national/local government. For example, a collapsed school is more "effective" or attractive than the rest of the territory do not suffer for appreciable losses; so, the strong support and timely recovery phases after a

disaster could run the risk to be are more "strategic" than the pre-disasters preparedness activities.

Dealing with disasters, the above mentioned challenges represents the *cancer* of any good policy action.

For this reason, the increase of communities' risk awareness and related *political will* are fundamental for shifting the political attention from the post-disaster phase to the DRR and resilience implementation.

Also, if the investments in disaster awareness increase, for example working on the new generations, could have a positive effect leading to future policy-makers being more aware than those of today.

These considerations are at the basis of the successful development of the Resilience Strategy and Local Resilience Action Plans that, for it's nature, have long-term vision.

With this basis, the ordinary government mandates should act just as pieces of an unique well structured and drafted vision. And this is the hardest result to obtain, as it means for the political party the waiver of forms of "exclusive protagonism" - existing worldwide although with differences - for a less visible action.

In conclusion, this stronger emphasis on combining technical issues with the instituional experience gaind in many years of engagement on the field is at the basis of the Province of Potenza strategic *assistance path to & collaboration with worldwide governments, cities, municipalities, communities that intend and commit to undertake similar paths* (Province of Potenza's Voluntary Commitment delivered in Geneva at the GPDRR2019).

REFERENCES

International official documents

UN-ISDR, 2015. *The Sendai Framework for Disaster Risk Reduction*. United Nations secretariat of the International Strategy for Disaster Reduction (UN/ISDR), Geneva, Switzerland

UN General Assembly, 2015. *Transforming our world: the 2030 Agenda for Sustainable Development*, United Nations, New York, USA

UNFCCC, 2015. *Adoption of the Paris Agreement, 21st Conference of the Parties,* United Nations, Paris, France

UN-HABITAT, 2016. *The New Urban Agenda adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III)*, United Nations, Quito, Ecuador

Other references

GIZ, 2011, *Integrating climate change adaptation into development planning. A practice-oriented training based on an OECD Policy Guidance.* Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in coordination with OECD, Berlin, Germany

IFRC, 2013. *A guide to mainstreaming disaster risk reduction and climate change adaptation*. Geneva: International Federation of Red Cross and Red Crescent Societies, Geneva, Switzerland

PEDRR, 2016, *Advancing Implementation of the Sendai Framework for Disaster Risk Reduction (2015–2030) through Ecosystem Solutions*. Partnership for Environment and Disaster Risk Reduction, PEDRR, New York, USA

Rudd, A., Malone, K., & Bartlett, M. 'L. (2017). *Participatory urban planning.* In A. Russ & M. E. Krasny (Eds.), Urban Environmental Education Review (pp. 279-287), Cornel University Press, New York, USA

UN-HABITAT, UNDP & GTF of Local and Regional Governments, 2015. *Localizing the post-2015 development agenda - dialogues on implementation*, United Nations Development Group

UN-ISDR, 2009. *Global Assessment Report on Disaster Risk Reduction 2009. Risk and poverty in a changing climate*, United Nations, Geneva, Switzerland

UN-ISDR, 2011. *Global Assessment Report on Disaster Risk Reduction 2011. Revealing Risk, Redefining Development*, United Nations, Geneva, Switzerland

UN-ISDR, 2012. *Making Cities Resilient Report,* United Nations, Geneva, Switzerland

UN-ISDR, 2013. *Global Assessment Report on Disaster Risk Reduction 2013. From Shared Risk to Shared Value: the Business Case for Disaster Risk Reduction*, United Nations, Geneva, Switzerland

UN-ISDR, 2015. Annex 4. *Future Challenges of Disaster Risk Management. In Global Assessment Report on Disaster Risk Reduction 2015. Making Development Sustainable: The Future of Disaster Risk Management*. United Nations, Geneva, Switzerland

UN-ISDR, 2015. *Global Assessment Report on Disaster Risk Reduction 2015. Making Development Sustainable: The Future of Disaster Risk Management*, United Nations, Geneva, Switzerland

UN-ISDR, 2015, *Ten Essentials for Making Cities Resilient: Local-Urban indicators*, United Nations, Geneva, Switzerland

UN-ISDR, 2016, *Report of the open - ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction*, United Nations, Geneva, Switzerland

UN-ISDR, 2017. *How to Make Cities more Resilient: A Handbook for Local Government Leaders*, United Nations, Geneva, Switzerland

UN-ISDR, 2017, *Local Government Powers for Disaster Risk Reduction: A study on Local-Level Authority and Capacity for Resilience*, United Nations, Geneva, Switzerland

UN-ISDR, 2017, *UNISDR terminology on disaster risk reduction*. United Nations, Geneva, Switzerland

UNFCCC, 2017, *Glossary of climate change acronyms and terms*, United Nations, Paris, France

UCLG- United Cities and Local Governments, 2017. *National and sub-national governments on the way towards the localization of the SDGs*. Barcelona, Spain

Wilkinson, E., E. Comba & K. Peters, 2014. *Disaster Risk Governance: Unlocking progress and reducing risk. ODI and UNDP*, United Nations, New York, USA

World Bank, 2011. *A Guide to climate change adaptation in cities*. USA

Other Publications by UN-ISDR United Nations. Geneva, Switzerland

Other Relevant Documents from National, EU and UN institutions.

Regional/Local Planning tools:

Province of Potenza. 2004. *Provincial Risk Assessment/Mitigation Plan and the Emergency Management Plan*. Potenza, Italy.

Province of Potenza. 2013. *Provincial Structural Master Plan (Provincial Territorial Coordination Plan - TCP)*. Potenza, Italy.

Further reading about the Province of Potenza's institutional experience:

Attolico, A., Smaldone, R., 2019. The Province of Potenza #weResilient multiscale and multilevel holistic approach in downscaling local Resilience and Sustainable Development: the case of the Province of Potenza and its Municipalities of Potenza and Pignola. Contributing Paper. The "State of DRR at the Local Level" A 2019 Report on the Patterns of Disaster Risk Reduction Actions at Local Level, Unisdr, Geneva

Attolico, Province of Potenza, 2017. Contributes and case-study into "*A Handbook For Local Government Leaders [2017 Edition]*", UNISDR, Geneva

Attolico, Province of Potenza, 2017-2018. Contributes and case-study into "Word into Action Guidelines" for the implementation of the Sendai Framework for Disaster Risk Reduction, UNSIDR, Geneva

Attolico A., Bloomfield I., Dvarioniene J., Gurauskiene I., Kliaugaite D., Mezosi B., Scorza F., 2017: *Engaged Communities for Low Carbon Development Process* – chapter from book Computational Science and Its Applications – ICCSA 2017: 17th International Conference, Trieste, Italy, July 3-6, 2017, Proceedings, Part VI (pp.573-584)

Attolico A., Harabaglia P., Vona M. 2016: Preliminary report on 2016 Central Italy Earthquake, Technical Report, School of Engineer, University of Basilicata, Potenza, Italy

Attolico A., Scorza F., 2016: *A Transnational Cooperation Perspective for "Low Carbon Economy",* from book Computational Science and Its Applications – ICCSA 2016: 16th International Conference, Beijing, China, July 4-7, 2016, Proceedings, Part I (pp.636-641)

Attolico A., Scorza F., 2015: *Innovations in Promoting Sustainable Development: The Local Implementation Plan Designed by the Province of Potenza,* from book Computational Science and Its Applications - ICCSA 2015: 15th International Conference, Banff, AB, Canada, June 22-25, 2015, Proceedings, Part II (pp.756-766);

Attolico A. (coordinating author) 2014: "*Implementation of the "resilience of communities" policy in land use planning on the provincial territory of Potenza*", Input Paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015 (GAR15), Unisdr, Geneva, Switzerland

Attolico A., 2014: "*Actions for Disaster Risk Reduction and implementation of local community resilience. The experience of Province of Potenza*", Input paper. The "State of DRR at the Local Level" A 2015 Report on the Patterns of Disaster Risk Reduction Actions at Local Level, Unisdr, Geneva

Attolico A., 2014: "*Resilience and land use planning on the provincial territory of Potenza*", Proceedings of the 5th International Disaster and Risk Conference IDRC Davos 2014 Davos, Switzerland, 24-28 August 2014;

Attolico A. 2014: "Building resilience through territorial planning: the experience of Province of Potenza", Proceedings of the 4th International Conference on Building Resilience, Salford Quays, United Kingdom, 8-11 September 2014;

Attolico A., Donofrio D., Laguardia G., Moretti V., Scorza F., Smaldone R., 2014: "*Growing Sustainable Behaviors in Local Communities through Smart Monitoring Systems for Energy Efficiency: RENERGY Outcomes*", Computational Science and its Application – ICCSA 2014, Volume 8580 - 787 – 793, Springer International Publishing AG, 2014;

Attolico A., 2014: "*Building resilience through territorial planning: the experience of Province of Potenza*", Procedia Economics and Finance 18 (2014) 528 – 535, Science Direct, Elsevier B.V., UK (single author);

Attolico, A., D'Onofrio, D., Moretti, V., Smaldone, R., Santandrea, A. Province of Potenza, 2013. *Coniugare la sicurezza territoriale e la riqualificazione funzionale della rete ecologica a fronte dei cambiamenti climatici*. In: Climate Change, naturalità diffusa e pianificazione territoriale. RETICULA monografy n.4/2013, ISPRA, Rome, Italy

Attolico, A., Harabaglia, P., Murgante, B., Vona, m. 2012. *Rischio Sismico e Resilienza delle Città*. Proceedings of the 31° Convegno Nazionale del Gruppo Nazionale di Geofisica della Terra Solida (GNGTS), Potenza, Italy

Attolico, A., Harabaglia, P. 2011. *Modello Previsionale di Scenari di Evento su Dati Accelerometrici*. Proceedings of 30° Convegno Nazionale del Gruppo Nazionale di Geofisica della Terra Solida (GNGTS)", Trieste, Italy.

Attolico, A., Nolè, G., Murgante, B., Moretti, V., Talò, G., Fletcher, R. 2010. *L'Informazione Geografica a Supporto della Ricerca Archeologica*. Proceedings of GFOSS Geospatial Free And Open Source Software Day 2010. Foligno (PG), Italy.

Attolico, A., Nolè, G., Moretti, V., Talò, G., Capponi, G., Cacace, C. 2010. *Il Database Geografico dei Beni Culturali: la Sperimentazione della Provincia di Potenza*. Proceedings of 6° Conferenza Nazionale in Informatica e Pianificazione Urbana e Territoriale Input 2010. Potenza, Italy.

Attolico, A., Nolè, G. 2010. *La Sperimentazione dell'uso dei Dati Osm nelle Attività di Pianificazione Territoriale e Protezione Civile della Provincia di Potenza*. Proceedings of Meeting Nazionale Progetto Osmit2010. Laboratory of Geodesy, Geomatics and Gis. DICAT - Faculty of Engineering and Italian Openstreetmap Community. Genova, Italy.

Attolico, A., Bixio, A., Pacifico, S., Province of Potenza. 2010. *The Potenza Province Emergency Plan: the Seismic Vulnerability Map of Buildings for the Construction of Earthquake Damage Scenarios*. In: Risks Challenging Publics, Scientists, Government. Menoni (Ed). Isbn 978-0-415-58072-4, 2010, Pagg.27-32. Taylor & Francis Group, London, UK

Attolico, A., Bixio, A., Province of Potenza. 2010. *The Potenza Province Emergency Plan: Seismic Risk Assessment: A Software Procedure for the Simulation of Damage Scenarios in Emergency Management*. In: Risks Challenging Publics, Scientists, Government . Menoni (Ed). Isbn 978-0-415-58072-4, 2010, Pagg.33-39. Taylor & Francis Group, London, UK

Attolico, A., Gallipoli, M.R., Harabaglia, P., Lapenna, V., Mucciarelli, M., Rosa, A.B. 2009. *A review of the activity of two accelerometric networks in Basilicata (Italy)",* Bullettin of Earthquake Engineering - Springer Netherlands, ISSN 1570-761X,

Attolico, A., Harabaglia, P. 2009. *Gli Insegnamenti del Terremoto del 6 Aprile 2009 in vista di Nuovi Eventi in Appennino Centro Meridionale*. Proceedings of 28° Convegno Nazionale del Gruppo Nazionale di Geofisica della Terra Solida (GNGTS). Trieste, Italy.

Attolico, A., Harabaglia, P. 2007. *Strumenti e metodologie per la gestione in tempo reale delle emergenze sismiche*. 12° Convegno Nazionale ANIDIS L'Ingegneria Sismica in Italia. Pisa, Italy.

Attolico, A., Ciorciari, C., Coviello, M., Giammetta, R., Harabaglia, P., Rosa, A.B., Telesca, A. 2007. *Monitoring of groundwater resources in the territory of Potenza Province (southern Italy)*. 10th Inter-Regional Conference on Water and Environment (Envirowat 2007): Ensuring Water and Environment for Prosperity and Posterity. New Delhi, India.

Attolico, A., Bixio, A., Pacifico, S., Province of Potenza. 2005. *The Emergency Plan of Provincia di Potenza: the seismic vulnerability map of buildings for the construction of earthquake damage scenarios. A simulation of 1857 Basilicata Earthquake*. The International Conference 250th Anniversary of the 1755 Lisbon Earthquake. Lisbona, Portugal.

Attolico, A. (coord), Province of Potenza. 2005. *The Civil Protection System of Provincia di Potenza: interoperability between operational instruments for emergency prevention and management*. The Annual Conference of the Society for Risk Analysis – Europe (SRAE). Como, Italy.

Attolico, A., Larocca, M.A., Sileo, C., Province of Potenza. 2005. *The Civil Protection Plan of Provincia di Potenza: applied methodologies and instruments for Hydro-geological Risk Management*. The Annual Conference of the Society for Risk Analysis – Europe (SRAE). Como, Italy.

Attolico, A., Bixio, A., Pacifico, S., Province of Potenza. 2005. *The Emergency Plan of Provincia di Potenza: the seismic vulnerability map of buildings for the construction of earthquake damage scenarios*. The Annual Conference of the Society for Risk Analysis – Europe (SRAE). Como, Italy.

Attolico, A., Bixio, A., Province of Potenza. 2005. Seismic Risk Assessment: a software procedure for the simulation of damage scenarios in emergency management. The Annual Conference of the Society for Risk Analysis – Europe (SRAE). Como, Italy.

Attolico, A., Ciorciari, C., Harabaglia, P., Rosa, A.B., Telesca, A., Province of Potenza. 2005.

Real-time monitoring of underground water resources in Provincia di Potenza territory. The Annual Conference of the Society for Risk Analysis – Europe (SRAE). Como, Italy.

Attolico, A., Ciorciari, C., Harabaglia, P., Rosa, A.B., Province of Potenza. 2005. *Seismic Risk Assessment: a numerical model for the construction of Event Scenarios suited for provincial territory of Potenza*. The Annual Conference of the Society for Risk Analysis – Europe (SRAE). Como, Italy.

Attolico, A, Harabaglia, P. Mucciarelli, M. 2004. *L'evento del 3 Settembre 2004 di Avigliano (PZ): possibile stima della velocità di diffusione dello stress*. Proceedings of Convegno Nazionale del Gruppo Nazionale di Geofisica della Terra Solida (GNGTS)". Roma, Italy.

Attolico, A, Harabaglia, P. Mucciarelli, M. 2004. *Il significato sismotettonico della microsismicità in Basilicata*. Proceedings of Convegno Nazionale del Gruppo Nazionale di Geofisica della Terra Solida (GNGTS)". Roma, Italy.

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