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D6.3 - Integrating risk information into urban planning/resilience strategies

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Short summary	The aim of this deliverable is to provide a set of recommendations on how to mainstream the risk information that was developed within the project (drivers of risk, current risk hotspots, and future risk scenarios) into urban planning and resilience strategies.	
Keywords	Capacity building, resilience strategy, risk informed urban planning	

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Table of Contents

1 Introduction 3
2 Challenges for mainstreaming risk information into urban planning 3
3 Capacity building 4
4 Recommendation for further integration of risk information into resilience strategies 6
5 Bibliography 7

1 Introduction

Urban disaster risk is a growing problem driven by two megatrends of global change: urbanization and the increasing frequency and intensity of climate-related extreme events. Moreover, development pathways have the potential to increase or decrease disaster risk and associated impacts. Thus, mainstreaming risk reduction and resilience strategies into urban planning is gaining more attention as a principal challenge for the process aiming for sustainable development. The Sendai Framework for Disaster Risk Reduction (2015-2030) ((UNISDR, 2015), which aims at guiding the global efforts on **disaster risk reduction (DRR),** indicates the slow progress that has been achieved in this area so far. Furthermore, a core concern of the framework urges actions to tackle underlying risk drivers and strengthening good governance in DRR strategies at all levels and across sectors and institutions. This particularly highlights the key role of local disaster risk reduction and resilience strategies as a medium- to long-term planning vehicle. As a remarkable sample of the international effort in this regard, UNISDR started the "Resilient Cities" initiative with a set of essentials as tools that enable local governments to track the progress of building resilience. Thus, understanding drivers, hotspots and dynamics of urban risk and moving towards adaptive, risk-informed development has to be a priority to avoid new risks and reduce existing ones. This deliverable aims at facilitating the development of risk-informed resilience strategy in Monastir.

2 Challenges for mainstreaming risk information into urban planning

Before going to the set of recommendations on building and improving local resilience, it is important to acknowledge the list of the critical challenges for risk-informed planning and implementation indicated in (UNISDR, 2017), such as:

1. Urban development exists in an intricate **legislative framework** established through a net of laws and regulations, the upgrade of these regulations should become gradually more risk-informed (UNISDR, 2015).
2. The presence of **reliable and up-to-dated local risk databases** is essential for planning decisions. In addition, it is of utmost importance to complement the databases with a list of clear procedures that facilitate the analysis and integration into the planning process.
3. The planning nature, which often involves **interdisciplinary collaboration** among multi-stakeholder (Climate & Development Knowledge Network, 2018).
4. **Financing** the implementation through seeking partnerships amongst multiple local planning agents.
5. The technical **capacity** of the planners. As both planned and unplanned urban growth rarely occur to reduce disaster risk, it is critical to integrate the risk-informed planning into the education curricula.

It is worth to note that three of the above mentioned challenges (2nd, 3rd and 5th) have been partially treated within UDRASP activities, as illustrated in the next section.

3 Capacity building

In this section the report highlights the activities achieved within the UDRASP project that help in building local capacity and support disaster risk reduction and adaptive planning. DRR is important before, during and after disasters, yet as the project focused on pre-disaster context, the deliverable highlights building risk reduction in prevention, mitigation, and preparedness. The activities carried out within UD-RASP were mainly treating two essentials from UNISDR list of principles in "How to make cities more resilient: a handbook for local government leaders" (UNISDR, 2012), see Table 1:

Essential 1 "**Organization and coordination for disaster risk reduction and resilience**". The engagement of local stakeholders started from the early phases of the project through participatory approach:

- **Focus group discussions**: With the municipality as a single point of coordination, the supported collaboration among the agents strengthened the local level institutional and coordination capacity as well as helped building alliances and networks within and beyond the city. The discussions helped in the organization by enabling better involvement and collaboration of local stakeholders in the identification and assessment of disaster risk as well as in exchanging ideas on the possible strategies for DRR.

Essential 3 "**Knowing and understanding current and future risk scenarios**":

- **Identification of existing capacities and needs**: The assessment was through interactions with relevant stakeholders at the local, regional and national level in the field of disaster risk management (DRM) and urban planning from several administrative, academic, private and civil organisations operating in the city. The consultations aimed at understanding which capacities are available among the stakeholders to ensure the design of appropriate capacity building activities, see D3.1 & D6.1.
- **GIS trainings**: The acts of: establishing municipal GIS unit, equipping the created unit (server and 4 machines), and conducting two GIS trainings in Monastir (Tunis) and Dresden (Germany) were made to ensure the sustainability of the project outcomes in supporting the DRR.
- **Online and field surveys**: The collected knowledge through the online surveys helped in weighting the importance of the risk and vulnerability drivers based on the stakeholders' expertise. Moreover, the organized field survey which covered 727 households in the city, enabled the collection of essential data on the socio-economic urban texture. The data analysis gave a detailed assessment of the current social vulnerability and risk conditions of 15 sub-units of the city which can be used for supporting DRR policy, see D3.2 & D4.4.
- **Data analysis and method development**: The collected knowledge enabled the assessment of the drivers' contribution to urban risk. The involvement of the locals in the analysis and the development of assessing current risk conditions enriched the local capacity by analytical skills to understand and evolve the process of the disaster risk assessment, see D3.2.
- **Urban growth and risk business as usual maps**: The business as usual simulations are based on the idea of extrapolating the future changes from the historical patterns. The created maps help to visualize and communicate the expected impacts of the current strategies on the city urban growth and future disaster risk conditions, see D3.2 & D4.2. **Urban growth and risk**

alternative scenarios: The conducted simulations helps to evaluate, analyze and imagine potential alternative scenarios for urban development and disaster risk conditions of Monastir until 2030. Thus, the scenarios used local quantitative and qualitative knowledge to give a spatial and temporal assessment for different pathways of the city. In addition, with the collaboration of the municipality, the comparison among the alternative future scenarios can support preventive planning by improving local policies and enhancing further risk-informed decisions, see D4.2 & D4.4.

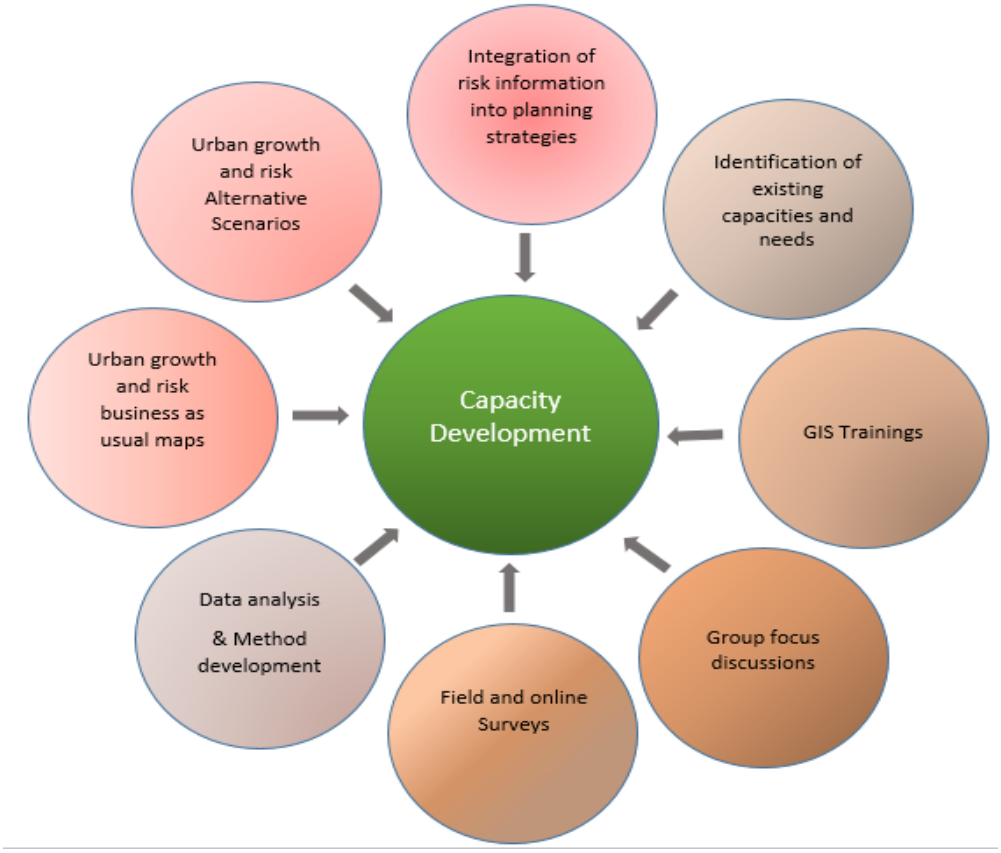

Figure 1: Framework showing the contribution of UD-RASP activities to local capacity development

Table 1: The Ten Essentials for Making Cities Resilient, Checklist Summary (UNISDR, 2012)

1	Put in place **organization and coordination** to understand and reduce disaster risk, based on participation of citizen groups and civil society. Build local alliances. Ensure that all departments understand their role in disaster risk reduction and preparedness.
2	**Assign a budget** for disaster risk reduction and provide incentives for homeowners, low income families, communities, businesses and the public sector to invest in reducing the risks they face.
3	Maintain up to date data on hazards and vulnerabilities. **Prepare risk assessments** and use these as the basis for urban development plans and decisions, ensure that this information and

	the plans for your city's resilience are readily available to the public and fully discussed with them.
4	Invest in and maintain **critical infrastructure that reduces risk**, such as flood drainage, adjusted where needed to cope with climate change.
5	Assess the safety of all schools and health facilities and upgrade these as necessary.
6	Apply and enforce **realistic, risk compliant building regulations and land use planning principles**. Identify safe land for low income citizens and upgrade informal settlements, wherever feasible.
7	Ensure that **education programs and training** on disaster risk reduction are in place in schools and local communities.
8	**Protect ecosystems and natural buffers** to mitigate floods, storm surges and other hazards to which your city may be vulnerable. Adapt to climate change by building on good risk reduction practices.
9	Install **early warning systems and emergency management** capacities in your city and hold regular public preparedness drills.
10	After any disaster, ensure that the **needs of the affected population are placed at the center of reconstruction**, with support for them and their community organizations to design and help implement responses, including rebuilding homes and livelihoods.

4 Recommendation for further integration of risk information into resilience strategies

In this context, our recommendations are mainly on extending and building on what has been established. Thus Monastir team is encouraged to:

1. **extend further the list of relevant stakeholders** to include governmental bodies at all levels (national, regional and local) as well as the private sector involved in the urban planning;
2. **engage, teach and learn by taking part in the regional and national learning programs** and promote further the city resilience initiatives;
3. **establish jointly with the relevant stakeholders a legislative framework and action mechanisms for resilience**, where based on a detailed assessment of the needs the framework would create strategies that channel resilience qualities of preventing new risk and reducing existing ones into the planning policies;
4. **establish policies to improve the acquisition, management and sharing of data** that is relevant for understanding and managing urban disaster risk;
5. **establish a reporting mechanism that promotes a measure of resilience** to track the change over time;
6. **keep an updated database on physical, social, economic and environmental exposed assets** and activities in order to simulate better the city risk;

7. **benefit from the transparency** shown in the process to use the current results, and **eventually improve the created scenarios (risk: hazard, exposure, vulnerability & urban growth).**
8. **enhance technical skills** and capacities **to develop and integrate geospatial data as an essential baseline in the risk-informed urban planning**.

In conclusion, the above developments can support DRR and promote proactive and preventive mentality which would reduce unplanned urban growth and substandard infrastructure (physical drivers), strengthen land management and governance (institutional drivers), decrease poverty and inequality (socio-economic drivers), and limit land degradation (environmental drivers).

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