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D6.1 - Report on Existing capacities and Stakeholder needs

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D6.1 – Report on existing capacities and stakeholder needs

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Short summary	Identification of the technical existing capacities and main needs in the city of Monastir through stakeholder consultation	
Keywords	risk management, urban planning, climate change adaptation, PAU, GIS, internet access	

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1 Introduction

In order to ensure the use of the project's results for long-term sustainable urban planning in Monastir, UD-RASP partners carried out an evaluation of the existing capacities and needs of local stakeholders.

To evaluate existing capacities and needs, 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 or in the *gouvernorat* were identified by the Municipality of Monastir in close collaboration with the project team. The complete list of organizations, along with their status, jurisdictional level and role in disaster risk or urban planning is available in Annex 1. In order to identify capacities and needs, the following activities were conducted: (a) stakeholder interviews (n = 31), and (b) an online survey (n = 9) to follow-up on the interviews. The online survey was split into two sections ("Risk" and "Data"), and was completed by seven and two respondents respectively. However, three respondents in the "Risk" survey and one in the "Data" survey had previously already taken part in the interviews. Consequently, their answers were discarded from the present report to avoid double counting.

The consultations aimed at understanding which capacities are available among the stakeholders to ensure the design of appropriate capacity building activities. In addition, the identification of the needs and perceived gaps in the implementation of sustainable urban planning and DRM measures should facilitate the development of outputs that meet the stakeholders' priorities.

The analysis of the consultation process provided information on the following themes:

- The role of stakeholders in DRM and urban planning,
- The existence of policies and projects addressing climate change adaptation (CCA), DRM and sustainable urban planning,
- The existence of relevant maps on risk and/or its sub-components (hazard, exposure, vulnerability),
- The use of scenarios as planning tools,
- The technical capacities and resources of relevant stakeholders.

The results of the evaluation are listed and elaborated in the present report.

2 Existing capacities and needs

This section provides an overview of the existing capacities and needs in the study area. The main areas of investigation concerned the role of the stakeholders in the fields of DRM and urban planning (section 2.1), their current use of risk information for sustainable urban planning through strategies, projects and relevant thematic cartography (section 2.2), the use and understanding of scenarios as planning tools (section 2.3), and the existing technical capacities and needs for the implementation of the future results of the current project (section 2.4).

2.1 Disaster risk management and urban planning in Monastir – Stakeholder mapping

Disaster risk management (DRM) in Tunisia revolves around the ORSEC plan, established by the national law 39/91 and detailed in the decree 942, dating the April 26th 1993. The plan defines a strategy for disaster relief, but also considers the necessity of prevention. At the central level, a permanent National Commission, chaired by the Ministry of the Interior and including the representatives of the Ministry of the Environment and the Ministry of Public Health, is in charge of elaborating a National Plan for disaster management. The secretariat of the Commission is permanently held by the Director of the Civil Protection. At the regional level, every Gouvernorat establishes and presides over a Regional Commission in charge of elaborating specific plans of intervention for different natural and man-made hazards.

For the stakeholder consultations in Monastir, the UD-RASP team summoned organizations with a role in either DRM or urban planning at the local level. As visible in figure 1, organisations involved in urban planning outnumbered those involved in DRM. However, one of the most relevant organizations, the *Comité pour la Géstion des Catastrophes Naturelles* was not able to take part in the evaluation process. Organisations with a role in both DRM and urban planning were able to provide relevant information on the connection between these fields in Monastir. Particular attention was devoted to understanding the current capacities and technical and organisational challenges of these organisations.

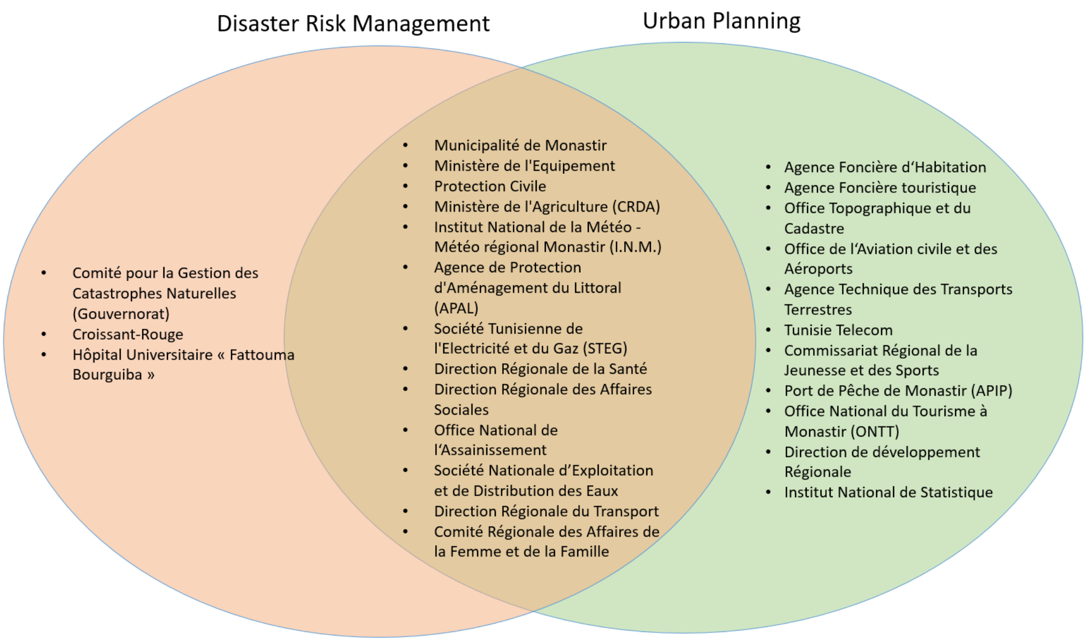

Figure 1: Disaster Risk Management (DRM) and Urban Planning in Monastir

2.2 Using Risk Information for Sustainable Urban Planning

The challenges in the integration of risk information in urban planning was explored along two main lines. First stakeholders were asked to provide their knowledge or perception over the existence and effectiveness of climate change adaptation (CCA) guidelines, strategies and projects (section 2.2.1). Secondly, they were asked for both the availability of and their capacity to use maps concerning risk information.

2.2.1 Existing strategies and projects

During the consultations, stakeholders were asked to express their perception or knowledge on existent CCA guidelines or projects, and on the use of risk information for urban planning. The aim of this evaluation was to assess the degree of accomplishment and penetration of past guidelines or projects, in order to build on potentially available results and understand what conditions might influence the successful outcome of the present project. The results are presented in the following graphs.

a) Climate Change Adaptation (CCA)

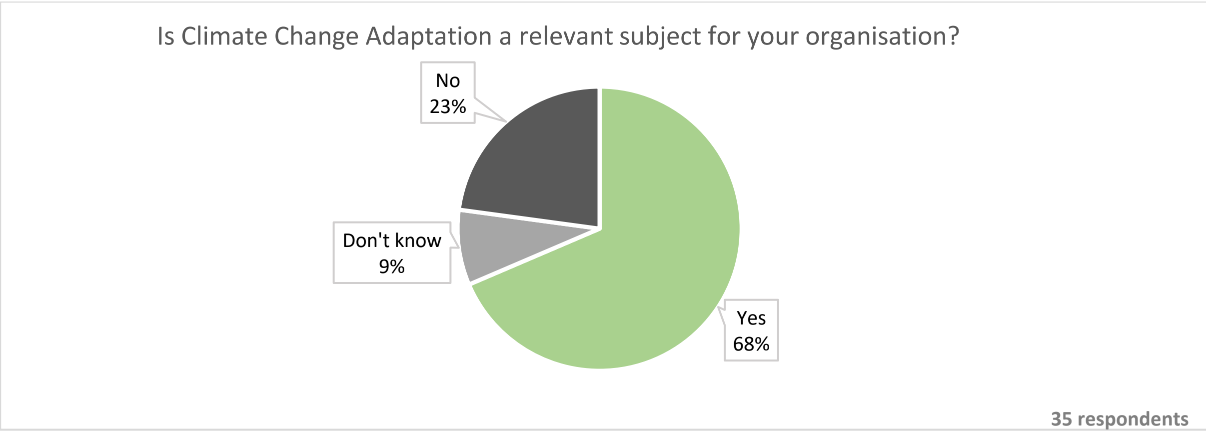

Figure 2: Relevance of CCA for organisations in Monastir

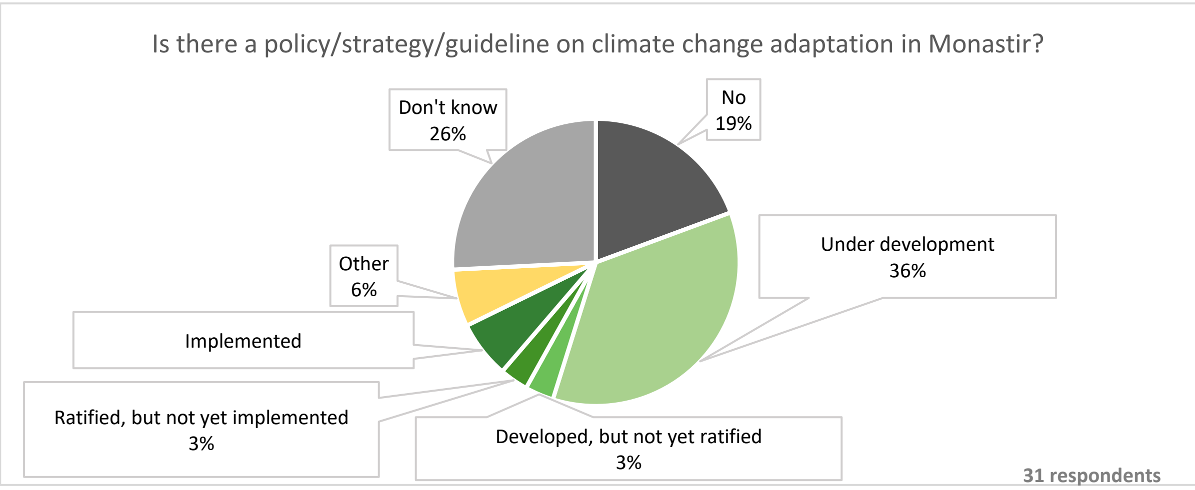

Figure 3: Existence of CCA policies/strategies/guidelines

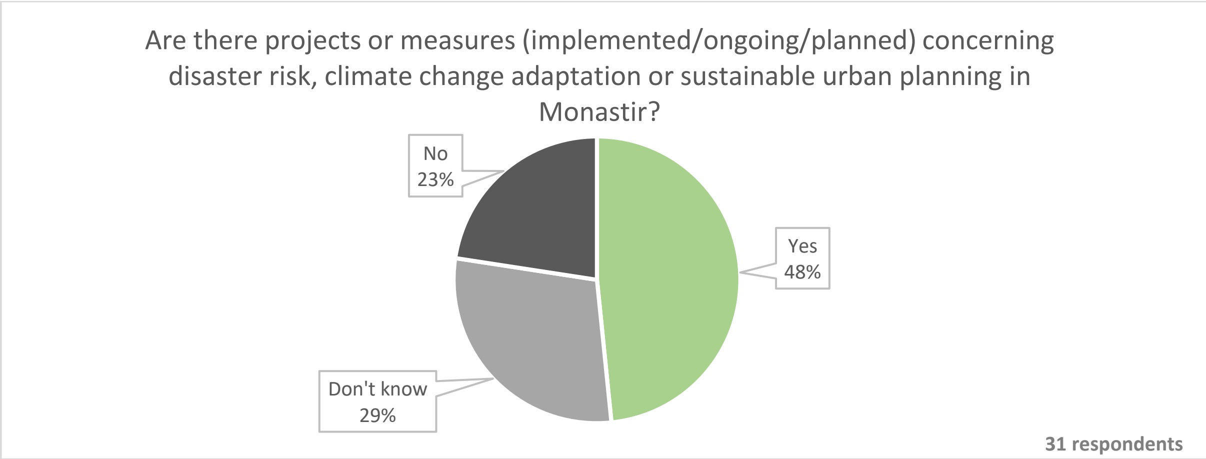

Figure 4: Existence of disaster risk, CCA or sustainable urban planning projects

b) Risk information

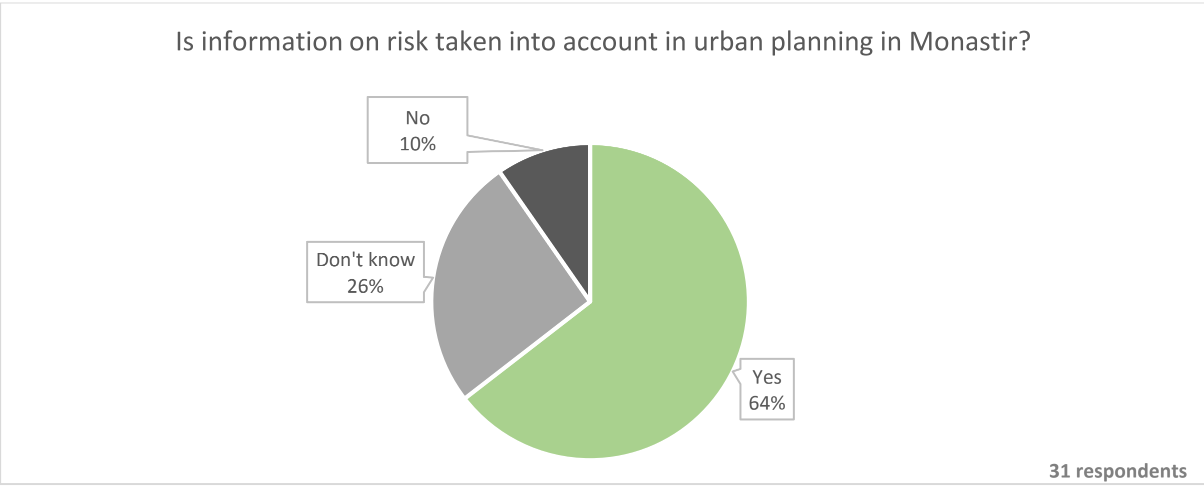

Figure 5: Relevance of risk information on urban planning

As visible in figure 2, the majority of respondents consider CCA to be relevant for their organisation, and slightly less than half believe that in Monastir CCA policies (figure 3) and projects (figure 4) are currently under some stage of development or implementation. Interestingly, few respondents actually pointed at programs developed within their organisations, but rather referred either to unspecified national programs or to local coastal protection programs developed by the Agency for Coastal Protection and Management (APAL). Other projects not strictly related with climatic or environmental hazards (for example, wastewater network renovation) were also mentioned. In general, information on CCA and relative strategies and projects seems to be unevenly understood and disseminated across the stakeholders, although a clear interest has emerged.

Stakeholders also declare that, according to their knowledge, risk information is already part of urban planning in Monastir (figure 5), especially for what concerns flooding and coastal hazards such as erosion and sea level rise. However, answers indicate that the general perception of risk is confined to the physical attributes of the (environmental) hazards involved.

2.2.2 Existing maps

In order to avoid duplication of already available material and to understand which maps are currently being used in Monastir, stakeholders were asked about the existence of maps referring to the categories of the conceptual framework of the IPCC's Fifth Assessment Report (AR5) (see deliverable 3.1):

- Natural hazards
- Exposure
- Vulnerability
- Risk

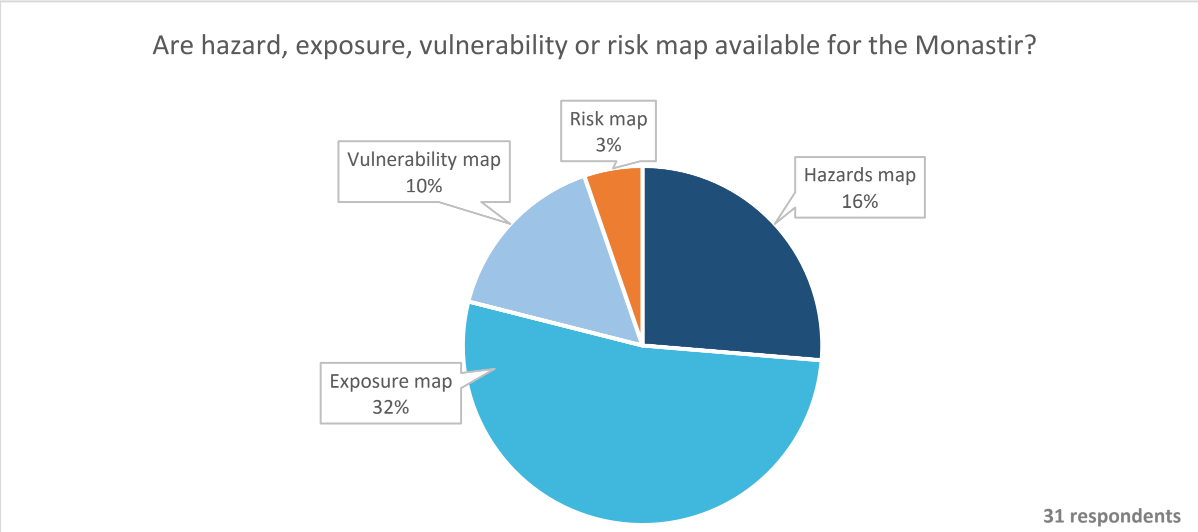

Figure 6: Existence of risk and/or related subcomponents maps

Although ten respondents (32%) indicated that exposure maps have indeed been developed (see figure 6), further inquiry did not result in clear information on the focus of these maps, their producers, their format or their availability. Similar outcomes stemmed from the other kinds of map cited. Functionaries of the *Ministère de l'Equipement*, however, reported that a "Risk Map" was produced by the ministry in 1996 and is currently under review for update. To date, however, the team was not able to access this map, and it remains unclear to which extent it is used for planning purposes to date.

The answers given in figure 6 informed the still ongoing maps collection by the municipality of Monastir. The collection process, however, resulted in a very limited amount of retrieved maps, which is in strong contrast to what has been indicated by the stakeholders (figure 6):

Table 1 List of available maps (Source: Municipality of Monastir)

Producers	Title or Source	Format
Commisariat Régional de Développement Agricole de Monastir (CRDA)	Gouvernorat - Carte Agricole 2004	GIS
	Gouvernorat - Carte Agricole 2012	GIS
	Gouvernorat - Climate	pdf
	Gouvernorat - Crop	pdf

	Gouvernorat - Groundwater	pdf
	Gouvernorat - Pedology	pdf
	Gouvernorat - Irrigated areas	pdf
	Gouvernorat - Valleys and wetlands	pdf
	Gouvernorat - Water table	pdf
	Gouvernorat - Wells	pdf
Agence de Protection d'Aménagement du Littoral (APAL)	Maps appearing in the report “Etude de la frange littorale de Monastir – Stratégie de réhabilitation”	pdf
Ministère de l’Equipement, de l’Habitat et l’Aménagement du Territoire	Maps appearing in the report “Etude de protection de la 2ème tranche de la falaise de Monastir”	pdf

The 2012 GIS version of the “Carte agricole”, prepared by the Commisariat Régional de Développement Agricole de Monastir (CRDA), is of particular interest for the risk assessment as it includes several layers of relevant information, such as infrastructures (transport, hydraulic, etc.) and agricultural productive land use classes. All information refer to the *gouvernorat* administrative level.

2.3 Scenarios

Scenario planning is a tool to imagine future pathways, including for urban development. Through the projection of diverse socio-economic and physical variables, scenarios can deliver useful qualitative analysis, and engage stakeholders in expressing the desirability of different projected future states, thus triggering confrontation and negotiation among them. During the stakeholders’ interviews, and in preparation for the scenario workshop, which was conducted in Monastir from 26-27 October 2017, respondents were consulted over their understanding, use and perception of scenarios as planning tools in Monastir.

2.3.1 Current use of scenarios as planning tools

The consultations showed that scenarios are currently not widely used as planning tools across stakeholders in Monastir. Several interviewees stated that their organisations prepare scenarios in their planning, however, further questions revealed that the stakeholders were referring to simple projections of data of interest (e.g. demographic growth, natural resources, migrations, etc.), which did not appear to inform a more comprehensive scenario design.

Stakeholders were subsequently asked about their perception on the current use of scenarios in the urban planning of Monastir. As visible in figure 7, several respondents believe that scenarios are currently employed, although when asked to elaborate in detail, only unspecific socio-economic and demographic thematic areas were mentioned.

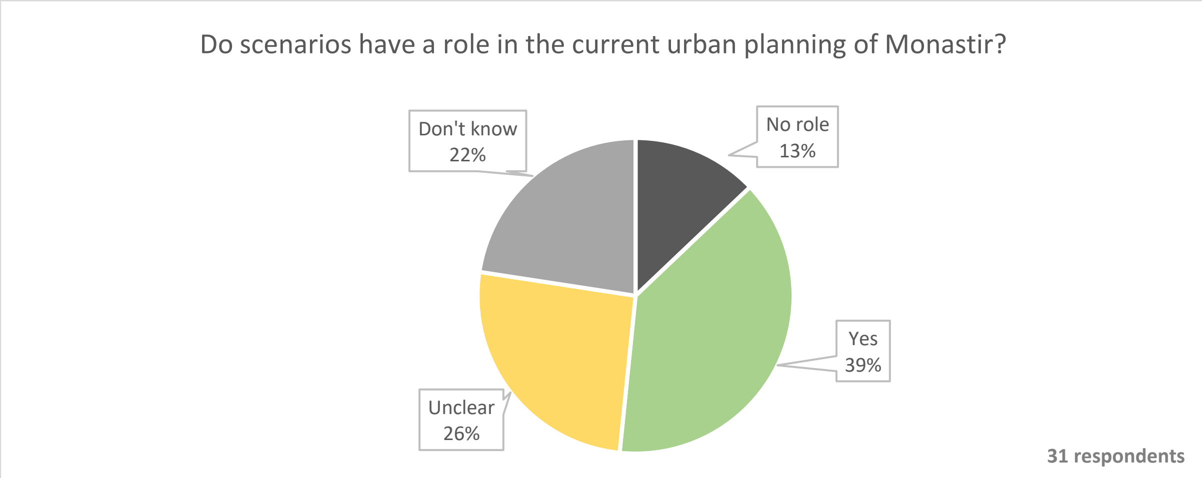

Figure 7 relevance of scenarios in urban planning

After reviewing the responses, it became evident that scenarios as a planning tool are not well known in Monastir, nor used to their full extent. However, many institutions seem to already have experience in using projections. These results indicate both potential interest and room for implementation of scenarios planning, which was the focus of the UD-RASP scenario workshop on 26-27 October 2017.

2.3.2 Usefulness of scenarios as planning tools

Further, stakeholders were asked to indicate which thematic areas they would consider relevant to build scenarios for Monastir (figure 8). Along with generic urban themes (urban and demographic growth, migration, etc.), a substantial amount of stakeholders pointed at “Disaster risk” as a priority for scenario planning for Monastir.

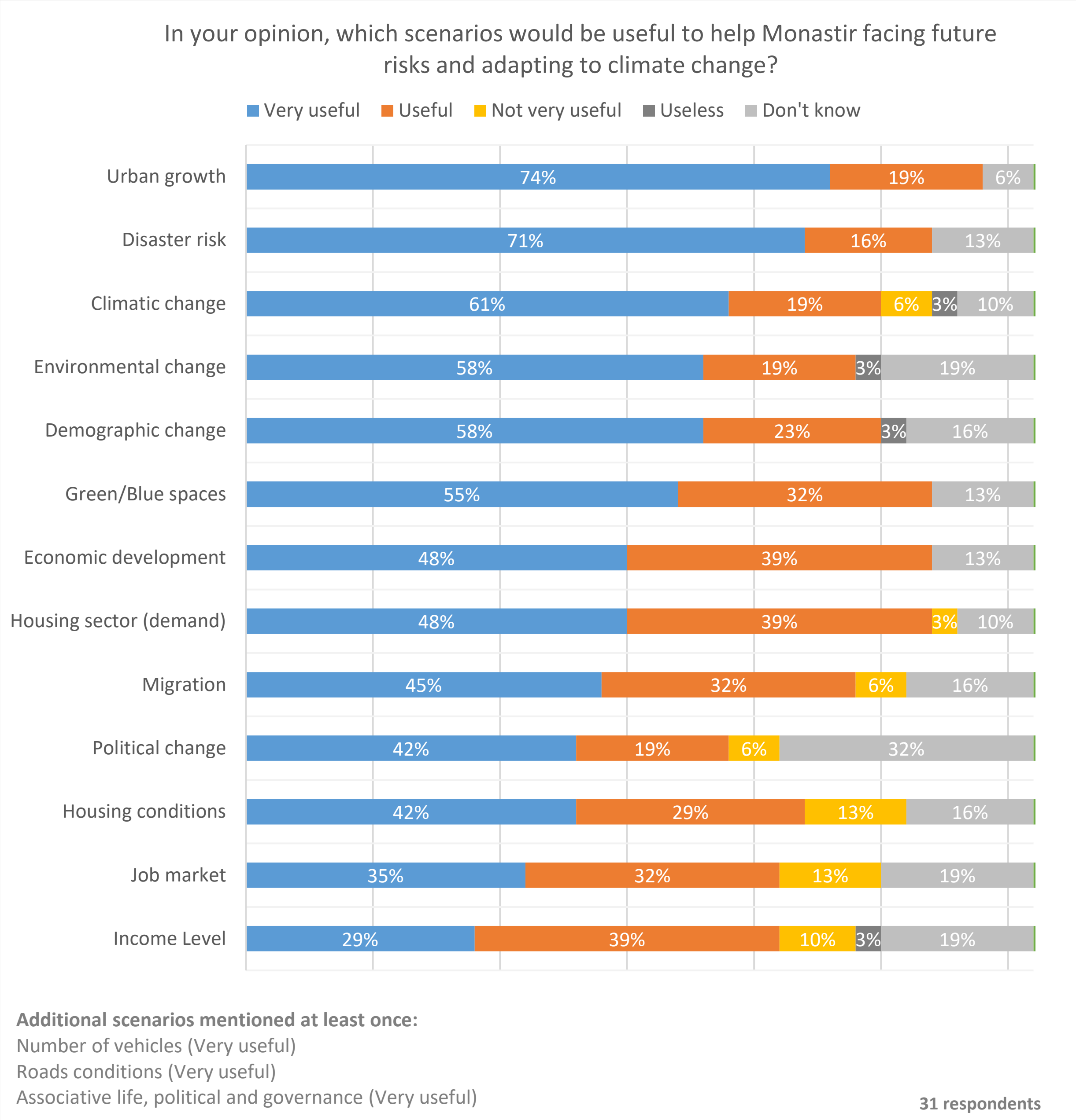

Figure 8: Scenario preference

2.3.3 Formats for scenario dissemination

The dissemination of relevant scenarios involves the choice between several different formats. Stakeholders were asked to express their format of preference, taking into account the existing technical capacities. As visible in figure 9, an authorities-only WebGIS platform is considered the most suitable solution.

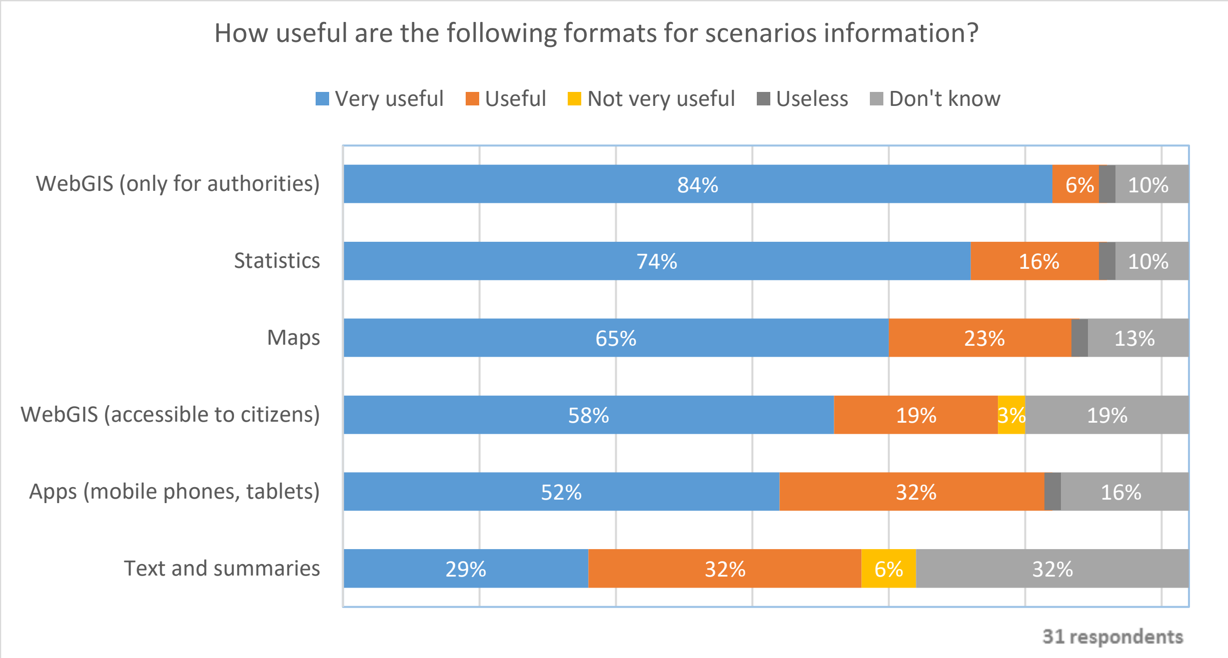

Figure 9: Preferences of scenario formats

2.4 Technical capacities and needs

The technical capacities and needs of the local stakeholders were assessed through 1) their current use of the main urban planning documents (i.e. the Plan d'Aménagement Urbain) available in the city, 2) the current internet accessibility and hardware and software availability/conditions of their organisations, with a special reference to geographical information systems, and 3) the number and level of training of technical personnel within each organization.

2.4.1 The Plan d'Aménagement Urbain (PAU)

The *Plan d'Aménagement Urbain* (PAU) is the main urban planning document in use in Monastir. As of now, the PAU is only available in paper format. Since an updated, GIS-based version of the PAU is currently under development by iABG and the Municipality of Monastir, stakeholders were asked for their perception of the usefulness of the PAU in its current contents and format.

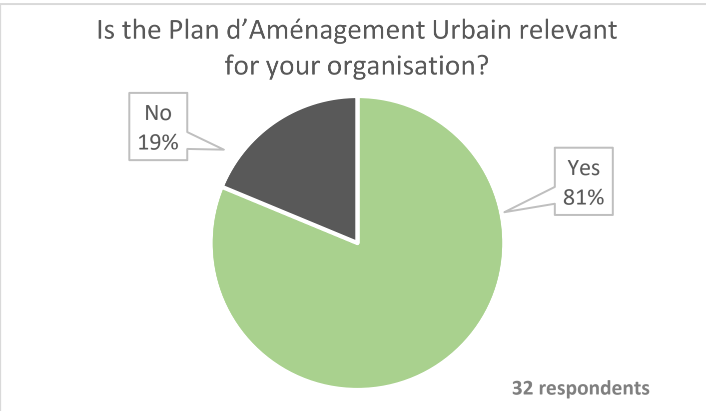

Figure 10: Relevance of PAU for organisations in Monastir

As visible in figure 10, the vast majority of respondents rely on the PAU for their activities. However, many lamented the long time span necessary for updates, and the lack of information on specific sectors, which would make the PAU a more useful tool. Interestingly, the majority of those who do not currently consider the PAU a useful tool for their work, have clarified that this is not the case because of the current contents of the document, but also that they wish for it to expand the breadth of its information and that they expect to use it in the future.

Information on disaster risk in all its components of hazard, exposure and vulnerability, developed by the partners of UD-RASP is planned to be integrated in the upcoming version of the PAU. In order to assess their needs in this respect, the stakeholders were asked to express their preference over the format of the new PAU, updated with risk information (figure 11).

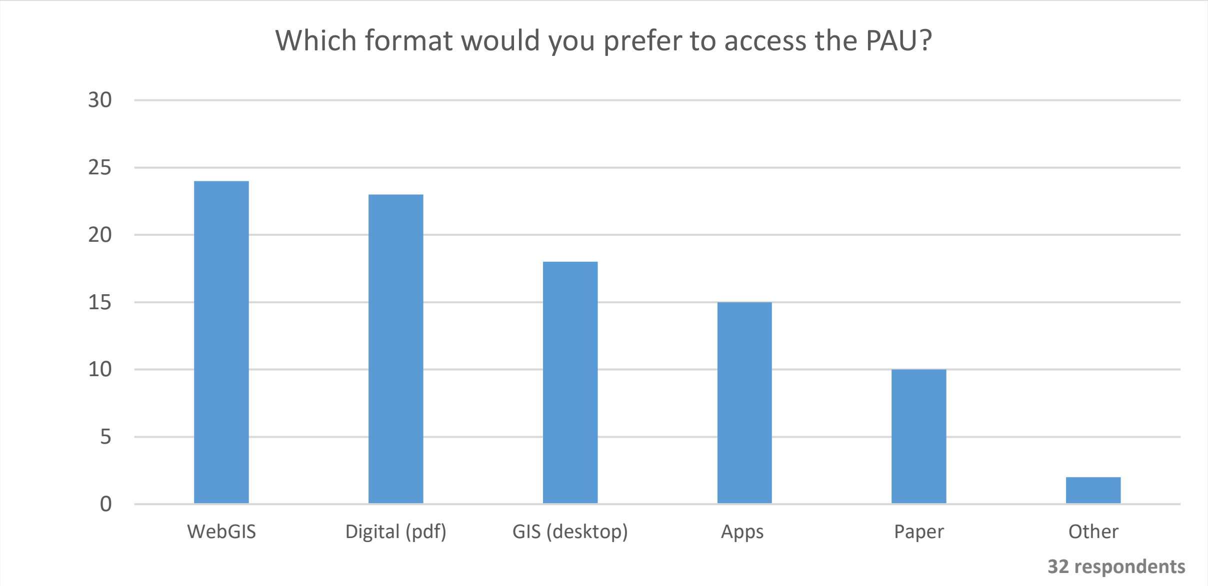

Figure 11: Preferences of PAU formats

In contrast to the results from scenario planning (section 2.3.2), the majority of stakeholders opted for a public WebGIS platform as the favoured format. This indicates a strong perception of the usefulness of the PAU for the general public.

As a way to assess their needs in terms of access to and use of urban planning documents, stakeholders were also given the possibility to indicate which additional layers of information they would like to see in the updated PAU. The most recurring requests are listed in table 2 (the layers already implemented in the PAU are specified in the parenthesis):

Table 2 Preference of additional layers for PAU

Needs: Additional Layers in updated PAU	Number of citations
Disaster-affected and at-risk areas	6
Water resources and rainwater infrastructures (already implemented)	4
Underground and over ground network infrastructure (already implemented)	3
Transportation infrastructures (already implemented)	3
Isopleths and geomorphological information	3

Visibility and air conditions (for airport operations)	2
Protected areas (already implemented)	2
Principal economic activities (already implemented)	2
Property and real estate	1
Building heights (already implemented)	1
Beach development plan (*Plan d'Occupation de Plage*) (already implemented)	1
Health facilities (already implemented)	1

As visible in table 2, the majority of the additional layers mentioned are already part of the official PAU. This can be read as a signal that the stakeholders do not possess a complete overview of the information available in the PAU, and that additional efforts to disseminate the document and its contents are therefore required.

2.4.2 Hardware conditions and software availability

Stakeholders were asked to describe the availability/state of the hardware in their organisations, along with the availability of relevant software, with a particular focus on GIS licenses. Whereas only six respondents pointed out a problem with the hardware in their organisation, nine respondents declared that their organisations suffer from either a shortage or a complete lack of GIS software licenses. Among the latter are organisations directly involved with urban planning and DRM.

Access to the internet was deemed unsatisfactory by the representatives of six different organisations. Strikingly, the Civil Protection of Monastir report no internet access at all. The different types of access to the internet available in each organisation are shown in figure 12. Personal access indicates a customized access based on single-sign on authorization where users can access a system only by username and personal password. General access means that all users are connected to the system without any customized restriction.

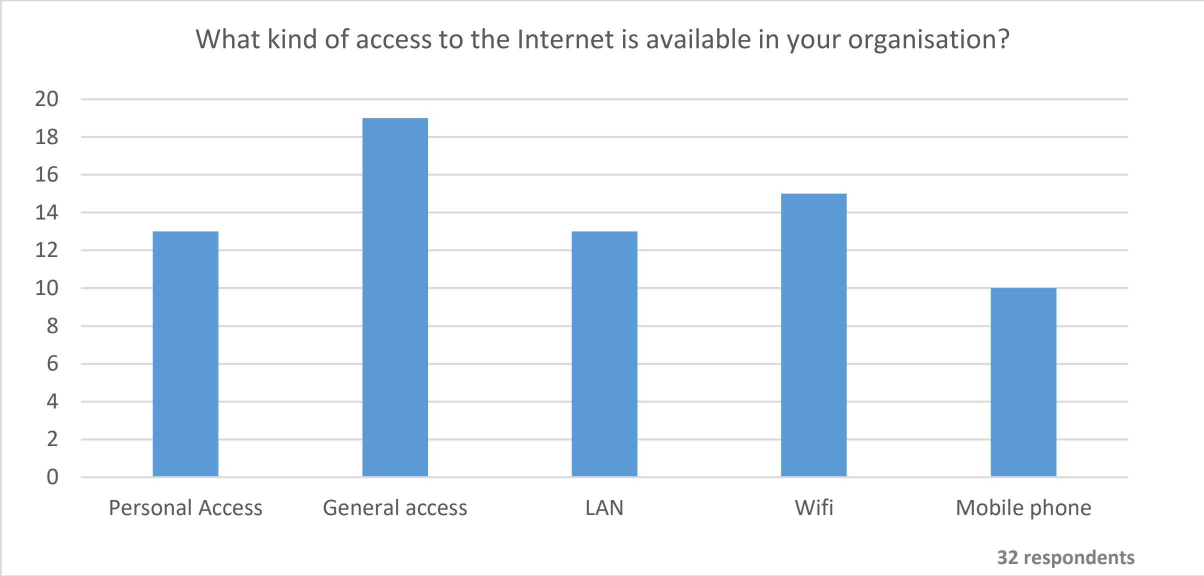

Figure 12: Existent Internet access typologies per organisation

2.4.3 Technical staff

Reliance on specialised technical personnel appears to be a challenge across stakeholders in Monastir. Although generic technical staff emerged to be quite widespread across the organisations, 13 respondents reported that they lack specialised technicians in GIS and data management – which appears to be in line with the denounced software shortages (see previous section) – whereas six different organisations employ cartographic, topographic or GIS technicians (among these the Civil Protection, however with only one resource of limited experience). Only three respondents lamented a general lack of personnel in their organisation.

3 Summary of existing capacities and needs

The following table summarizes the current capacities and needs across the consulted stakeholders in Monastir. In regard to urban planning and DRM challenges, this list will inform the design and implementation of all subsequent phases of the project.

Table 3 Summary of existing capacities and needs

	Capacities	Needs
Strategies & projects	• Coastal protection programs already in place (i.e. APAL)	• Integrated CCA, DRM and urban planning strategies
Maps	• Some maps available (Table 1), but no specific exposure, vulnerability or risk maps • Hazard maps available (coastal erosion) but last updated in 2009	• Mapping of other components of risk (exposure, vulnerability) • Updated hazard maps (e.g. flooding, etc.)

Scenarios	• Projections-based planning already used by few organizations, but unclear how these were derived and how they are used in detail	• More comprehensive scenarios (incl. urban growth, disaster risk, climate change, etc.) could be beneficial, but stakeholders seem not very knowledgeable on their potential • Web-based formats, statistics and maps were perceived to be most useful formats
Technical capacities	• Widespread use of the paper-based PAU • Availability of technical staff	• Software licenses (GIS) • Technical staff trained in GIS and/or data management

The following are additional information, extracted from the consultations, on what the stakeholders perceive as the most pressing gaps in urban planning and DRM: institutional organisation, coordination and delay; information and data shortage; financial means; equipment; centralisation issues; governance; political will.

Annex 1

In addition to those organizations who are involved in disaster risk management (DRM) and urban planning (UP), six organisations with no official role in either field but a strong interest in the development of sustainable policies for Monastir participated in the evaluation process.

Stakeholder consultations: organisations and roles

Organization	Status	Level	Role in DRM and/or urban planning (UP)
Municipalité de Monastir	Public	Local	DRM/UP
Port de pêche de Monastir (APIP)	Public	Local	UP
Hôpital Universitaire “Fattouma Bourguiba”	Public	Local	DRM
Office National du Tourisme à Monastir (ONTT)	Public	Local	UP
Ministère de l'Equipement - Direction Générale de l'Equipement	Public	Regional	DRM/UP
Protection Civile de Monastir	Public	Regional	DRM/UP
Office Topographique et du cadastre	Public	Regional	UP
Office de l'aviation civile et des Aéroports (O.A.C.A.)	Public	Regional	UP
Institut National de la Météo - Météo régional Monastir (I.N.M.)	Public	Regional	DRM/UP
Direction de développement Régionale	Public	Regional	UP
Commissariat Régional de Développement Agricole de Monastir (CRDA) - Reboisement et protection des sols (RPS)	Public	Regional	DRM/UP
Commissariat Régional de Développement Agricole de Monastir (CRDA) - Conservation des eaux et du sol (CES)	Public	Regional	DRM/UP
Agence de Protection d'Aménagement du Littoral (APAL)	Public	Regional	DRM/UP
Tunisie Telecom	Joint public-private	Regional	UP
Société Tunisienne de l'Electricité et du Gaz (STEG)	Public	Regional	DRM/UP
Agence Technique des Transports Terrestres	Public	Regional	DRM/UP
Direction Régionale santé	Public	Regional	DRM/UP
Direction Régionale des affaires sociales	Public	Regional	DRM/UP
Office national de l'assainissement	Public	Regional	DRM/UP
Société Nationale d’Exploitation et de Distribution des eaux (SONEDE)	Public	Regional	DRM/UP
Direction Régionale du Transport	Public	Regional	DRM/UP
Institut National de Statistique	Public	Regional	UP
Agence foncière touristique (AFT)	Public	Regional	UP
Agence Foncière d'habitation (AFH)	Public	Regional	UP

Organization	Status	Level	Role in DRM and/or urban planning (UP)
Commissariat régional de la jeunesse et des sports	Public	Regional	UP
Comité régionale des Affaires de la femme et de la famille	Public	Regional	DRM/UP
Croissant-Rouge Tunisien – Gouvernorat Monastir	Private	Regional	DRM
Ministère de l'Equipement - Direction de l'Hydraulique Urbaine	Public	National	DRM/UP