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CLIMATE CHANGE IMPACT ON THE TOURISM SECTOR IN THE SOUTHERN MEDITERRANEAN

Foreseen developments and policy measures

FINAL REPORT

July 2018

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Contents

Executive summary 4

Chapter 1 5
Setting the stage for this study 5
Scope and objectives of the study 5
Background and challenges at stake 5
Methodological overview 5
Contents of the chapters in this study 6

Chapter 2 7
Climate Change impacts on Tourism in ENI South Countries 7
Overview of impacts and threats for the tourism sector 7
Relevant assets and services for the sector are already affected by climate change 8
Other impacts are still limited but expected to increase rapidly 10

Chapter 3 13
Existing policy measures in addressing the emerging challenges 13
Overview of existing policy measures: strengths and gaps 13
Specific strengths and weaknesses that characterise certain countries 13
Common gaps and challenges that emerge across the region 16

Chapter 4 21
Need for action for a fast-growing and the relatively ignored challenge 21
A mismatch between the identified impacts and the existing sectoral response 21
Regional actions and initiatives needed to strengthen local responses 21

Chapter 5 22
Conclusions and recommendations 22

Executive summary

This study assesses the effects of climate change on the tourism sector across the southern Mediterranean countries and evaluates relevant policy measures addressing these challenges for the region. Tourism is an essential sector for the economy of these countries and it has a huge potential for growth and impact on job creation, development of sustainable infrastructures and understanding of how turning Climate Change issues into adaptation opportunities across the Mediterranean. The sector is nevertheless still facing a number of policy challenges that, to be fully addressed, require further action by all stakeholders at different levels of governance across institutions, research centres, operators and the civil society at large.

Based on the review of publicly available secondary evidence, this paper goes beyond the current assessment on the impact of tourism on climate change and environmental sustainability. It addresses the issue from the angle of the less explored but equally worrying threat posed on the tourism sector by the effects of climate change. The evidence provided suggests the need for more effective adaptation measures for the tourism sector across Eastern (Egypt, Israel, Jordan, Lebanon and Palestine) and Western (Algeria, Morocco and Tunisia) southern Mediterranean countries.

As emerging from this study, climate change pressures on the tourism sector are only partially felt today, but are bound to rapidly intensify in the coming years. Local operators are nevertheless not always fully able to respond to such pressures, due to the limited capacity to act in the longer term (beyond an annual, seasonal if not even quarterly timeframe) and as a result of an often fragmented and micro-SMEs dominated sector lacking of substantial innovation and adaptation capacity. Some degree of "market failure" in the sector therefore emerges, calling for an effective policy intervention to boost adaptation.

And yet, local policy response is nowhere near to be optimal at present. Even when some good practices have emerged, they are often partial and "on paper" rather than fostering systemic change and adaptation "in practice". Also, some valuable climate change policies that exist in many countries are not specifically translated into sectoral tourism policies, and vice-versa. In such context, the Union for the Mediterranean can play an important role in fostering more concrete and effective measures by pushing for greater exchanges amongst local and regional sectoral stakeholders across the seabasin, as further discussed in the recommendations section of this paper.

Chapter 1

Setting the stage for this study

Scope and objectives of the study

This study assesses the extent to which the effects of climate change are impacting the tourism sector across the Southern Mediterranean countries and the relevant policy measures tackling these challenges across the region. Promoted as part of the support actions for the Climate Change Expert Group (CCEG) in the Union for the Mediterranean (UfM), the study focuses on eight UfM Member States of the Southern Mediterranean region, which are part of the European Neighbourhood Instrument (ENI) - namely Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine and Tunisia. It will serve as support for discussions on future challenges of climate change and on concrete joint actions to address gaps and improvements for the policy measures currently in place.

Background and challenges at stake

The UfM recognises the importance of tourism for the economy of the countries of the region as well as the potential for growth and its impact on job creation, infrastructure and cultural understanding across the Mediterranean (Roadmap for Action, p. 16)[2]. The relevance of the sector for the Mediterranean is also reported by other regional sources (Plan Bleu, 2017)[3]. The sector, nevertheless, is facing a number of challenges, which require further action by all stakeholders at different governance levels, as discussed in recent studies (West Med Initiative, Context Analysis[4], p. 14).

In this context, the effect foreseen for climate change in the region could further affect tourism destinations, their competitiveness and sustainability, through a range of direct and indirect impacts:

- Direct impacts due to changes in operating costs (structural damages, insurance premiums, etc.), as a result of geographic and seasonal redistribution of climate resources (heating-cooling degree days, etc.);
- Indirect impacts due to climate-induced changes in assets of the tourism sector (biodiversity loss, decline of landscape aesthetic, increase in vector-borne disease), services (water shortages) and damage to infrastructure;
- Broader impacts due to mitigation policies, including changes in tourist flows caused by increased travel prices, alterations to aviation routes, changes in the proportion of short-haul and long-haul flights, etc.

As discussed in this study, such effects are in part already felt but mostly bound to intensify in the coming years, thus there is a need to mobilise all actors to ensure that current challenges are turned into opportunities. The UfM can play a central role in supporting such a change and adaptation across the Mediterranean (Annual Report 2016, p.32), by acting as a regional platform coordinating and promoting initiatives and concrete projects related to tourism within UfM activities (Roadmap for Action, p. 16).

Methodological overview

The study builds on publicly available secondary sources across ENI South Countries and the specific insights provided by the national Focal Points for the UfM-CCEG. It also reflects upon the discussion and feedback received during the UfM-CCEG meeting held in Barcelona on the 24-25 of April 2018.

This paper builds on the analysis provided in a series of Country Fiches, discussed with National Focal Points. The fiches discuss more detail items and challenges, while for sake of synthesis and readability the assessment provided in this document is grouping some specific items together (e.g. risks/costs/economic-losses, biodiversity-losses/diseases/temperature-rising).

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[1] *European Neighbourhood Instrument South partners are Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria, Tunisia.*
[2] *http://ufmsecretariat.org/wp-content/uploads/2017/07/UfM-Roadmap-for-action-2017.pdf*
[3] *http://planbleu.org/sites/default/files/publications/cahier17_tourisme_en_web.pdf*
[4] *http://www.westmed-initiative.eu/wp-content/uploads/2016/07/WestMed-Maritime-Initiative-Report1(public).pdf*

Furthermore, the data and analysis provided is aggregated at the sub-regional level in the Eastern and Western countries, so to highlight similarities and differences amongst at regional and sub-regional levels. A number of strategic conclusions and related action-points are then identified, as discussed with UfM-CCEG Members, aiming to strengthen the response capacity of the tourism sector across the region.

The information provided is proposed as a "starting point" for a more consistent scientific and policy dialogue on this relevant and yet relatively neglected area of policy support (i.e. impacts of and adaptation needs for the tourism sector). Our findings therefore aim at triggering national and regional actions and further improvements, rather than providing the ultimate assessment on the current and future state of play.

Contents of the chapters in this study

The study is structured into the following sections:

- Chapter 2 provides an overview of findings in terms of the impacts of climate change on tourism
- Chapter 3 reviews the most relevant policy measures currently in place and the emerging gaps
- Chapter 4 offers an overview of the areas where further actions are needed to sustain local capacity
- Chapter 5 provides a conclusion and list of recommended actions with concrete next steps.

UfM Climate Week 2018, Barcelona

Chapter 2

Climate Change impacts on Tourism in ENI South Countries

Overview of impacts and threats for the tourism sector

A substantial range of literature is available[5] for the assessment of the impact that the tourism sector has in the production of Greenhouse Gasses (GHG) and also on Climate Change, focusing on the possible climate change mitigation measures for the sector, both globally[6] and in the Southern Mediterranean[7]. Nevertheless, the proportion of grey literature and scientific studies on the potential effects that climate change is having on the tourism sector[8], and that it is expected to have in the future, remains relatively limited. This analysis aims at addressing such shortage and provides initial evidence on this aspect, as a basis for more effective adaptation measures for the sector across the region[9]. The analysis is provided with an overview of differences and similarities across the Eastern (Egypt, Israel, Jordan, Lebanon and Palestine) and Western (Algeria, Morocco and Tunisia) ENI South countries[10].

The assessment is based on the most recently available and relevant secondary sources (2017), as well as expert judgment and available sources for possible evolution towards the mid (2030) to longer (2050) terms. Based on the sources consulted, the sector appears already exposed to certain pressures related to the effects of climate change, although with some differences across the two shores and across countries. Although such impacts are not yet perceived as relevant, though they are expected to rapidly grow in the near and longer-term. The cross-analysis of the patterns emerging across countries allows to identify the different degrees of threats for the sector due to climate change pressures throughout the countries assessed in this study. An illustrative overview is provided by Figure 1 below, with an overview of the impact on revenues, assets and services presently and its intensification in the mid to long-term future.

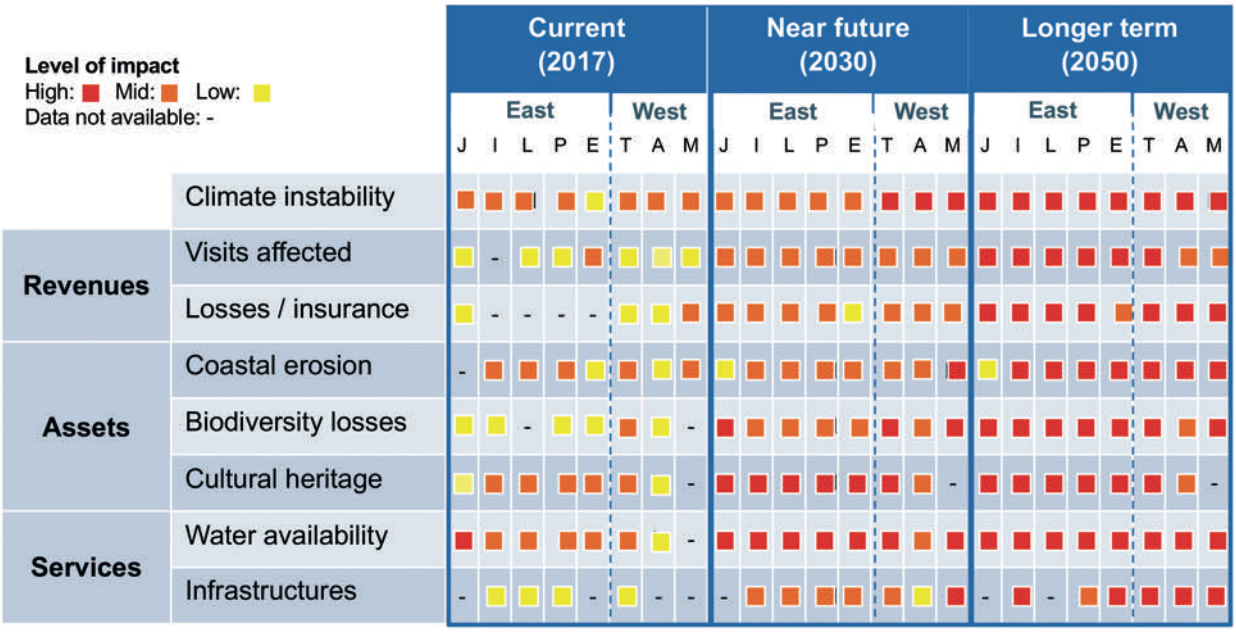

Fig. 1. Overview of the impact of climate change on the tourism sector through time
Source: Country Fiches

Commonalities and differences are discussed in greater details in the next sections of this chapter.

[5] *ideas.repec.org/a/gam/jsusta/v10y2018i3p590-d133424.html*
[6] *www.sciencedaily.com/releases/2018/05/180507111914.htm*
[7] *www.medecc.org/?p=815*
[8] *sdt.unwto.org/en/content/climate-change-tourism*
[9] *www.iemed.org/observatori/arees-danalisi/arxius-adjunts/anuari/med.2016/IEMed_MedYearBook2016_The%20Plan%20Bleu%20Tools_Antoine_Lafitte.pdf*
[10] *The visualisation of individual countries does not follow any specific order, as the purpose is to 'compare' and not 'confront' those practices.*

Relevant assets and services for the sector are already affected by climate change

A number of factors are already affecting tourism operators and stakeholders in the sector across the selected Southern Mediterranean countries as a result of climate change - e.g. through increasingly unpredictable fluctuation of the volume of seasonal visits which can have an impact on operators' revenues where tourism destinations are highly dependent on seasonal factors. Nevertheless, the areas of higher impact that emerged from the country analysis are those related to essential assets and services for the tourism sector. The effects of climate change with respect to coastal erosion, for example, are already relatively noticeable across the southern Mediterranean (and the Red Sea for the Eastern countries). As such, they pose increasing challenges to all ENI South countries, which important tourism attractions rely on rich coastal and marine ecosystems, biodiversity assets and cultural heritage[11] sites. Climate change is also, and importantly, already posing significant indirect pressures in terms of increased scarcity of water resources and, to some extent, degradation through floods and coastal erosion. This is particularly a threat for the Eastern countries assessed for this study, traditionally exposed to such a challenge and more vulnerable than others to such impact, but the pressure is expected to rapidly escalate across the region. An overview and comparison of threats and differences discussed is provided in Figure 2.

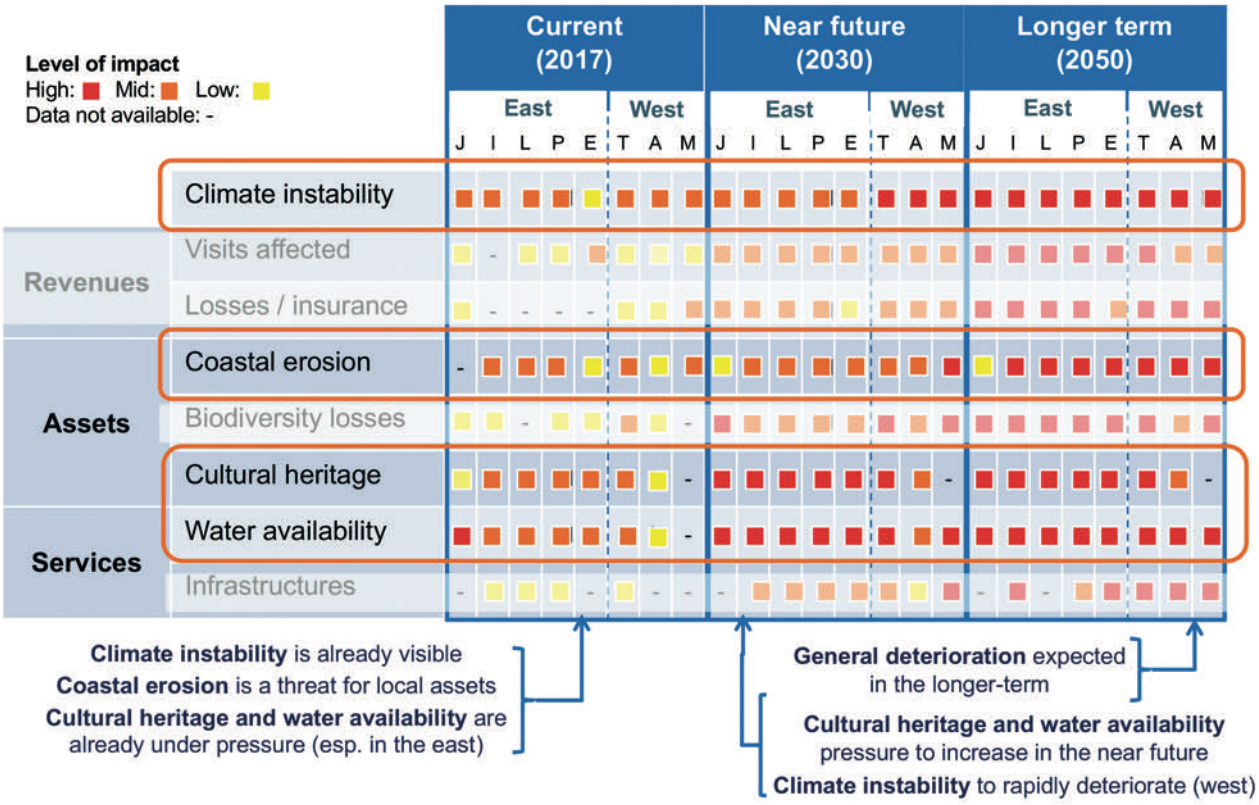

Fig. 2. Areas of impacts of CC already affecting the sector and expected to increase through time

Selected examples of these pressures across the assessed countries are provided in the box below.

[11] *http://whc.unesco.org/document/139944*

Box 1. Examples of current pressures on assets and services emerging across selected countries

Data collected are often heterogeneous and it is difficult to suggest relevant and representative examples across the entire region. Nevertheless some examples can be provided to give a hint on the relevance of the challenges discussed in this section, with greater details provided in the Country Fiches. These are findings from a preliminary assessment, to be further discussed and expanded in future UfM activities.

The growing instability of water precipitation throughout the year exposes the tourism sector to the risk of limited access to fresh-water resources, which are a specific threat especially in those areas (Western Mediterranean) where lack of fresh water is already a challenge. The threat is particularly severe in the lack of adaptation of the sector to reduce its need and consumption of fresh water. The review of publicly available statistics has pointed out a particular current pressure on water availability in Jordan, while more limited pressure in Algeria, inter alia due to desalination activities and with no publicly available data for Morocco. This is nevertheless a challenge which is expected to become increasingly relevant for all the assessed countries in the Southern Mediterranean.

Coastal erosion is another area of concern for the tourism sector, due to the relevant value of local coastal assets in most of the assessed countries, including relevant cultural heritage sites. In Lebanon, for example, sea level is expected to rise by 12 cm to 25 cm per year by 2030 and 22 cm to 45 cm by 2050. This is just an example of the data emerged across the region, but gives an insight of the real challenge it poses to local tourism operators and other sectoral stakeholders. Lower pressure on coastal erosion has emerged for Egypt and Algeria, with no publicly available data identified for Jordan and no data related to the pressure on cultural heritage sites in Morocco. Future available trends and scenarios, instead, point out a general growing pressure in the mid (2030) to longer term (2050). Jordan seems less exposed to such pressure when it comes to coastal erosion, both in the mid to longer term, while Morocco seems more exposed than all other countries by 2030 due also to its exposure on the Atlantic.

Source: Country Fiches

Climate pressures resulting in coastal erosion require strategic investments and collaboration across the various stakeholders to be duly addressed - e.g. through sustainable infrastructures and strategic plans for the use of the land. As impacts are emerging mildly so far, though, there is a concrete risk that these are not perceived as particularly important by operators and policymakers, distracted by a range of other relevant short-to-mid-term impacts on the sector. Water availability seems instead to be a specific area where relevant impacts are already emerging, and are expected to increase in the mid-term, and as such is more visible to the sector stakeholders. We therefore expect the latter to be an area where policy responses are generally available, compared to other impacts described. These aspects are nevertheless to be further discussed in Chapter 3, when assessing the existing policy measures.

In the next section, we review those impacts of climate change that are still not perceived as relevant but are expected to rapidly grow in the future across the Southern Mediterranean.

Other impacts are still limited but expected to increase rapidly

If we look at the other potential areas of impacts that are considered under this study, the findings are striking and worrying. A number of impacts currently not perceived as particularly relevant, although already occurring, are in fact expected to rapidly grow in the mid to longer term. These are impacts affecting the economic performance of the sector either directly (i.e. losses of visits and increasing direct costs due to high climate instability discouraging local and particularly international visitors), or indirectly (i.e. losses related to local biodiversity which characterise the majority of the tourism appeal of local destinations, as well as deterioration of local essential infrastructures due to floods pressure, etc.).

The impact on visits due to climate instability, for example, still appears to be relatively limited across the assessed countries - with some notable exceptions. It is nevertheless expected to rapidly increase in the mid-term across all countries, so as to become extremely relevant in the longer term. Similarly, revenues are increasingly affected by the rising costs for local operators in response to losses in visits as well as increasing insurance costs to be paid to address the volatility of both incomes and costs caused by more severe climate conditions - including the damages due to floods and other environmental pressures.

These longer-term impacts are therefore reinforcing themselves in a negative downward spiral:

- Losses incurred in local ecosystems and cultural heritage sites affect the quality of tourism assets and the appeal to local and importantly international visitors, with potential severe losses in economic gains for local operators, while;
- Severe weather and climatic conditions threaten the quality and reliability of available infrastructure, in turn increasing direct costs for reparation by local operators and the availability of basic services for tourists, particularly international visitors needing reliable infrastructure to access local destinations.

An overview and comparison of the threats and the differences discussed is provided in Figure 3 below.

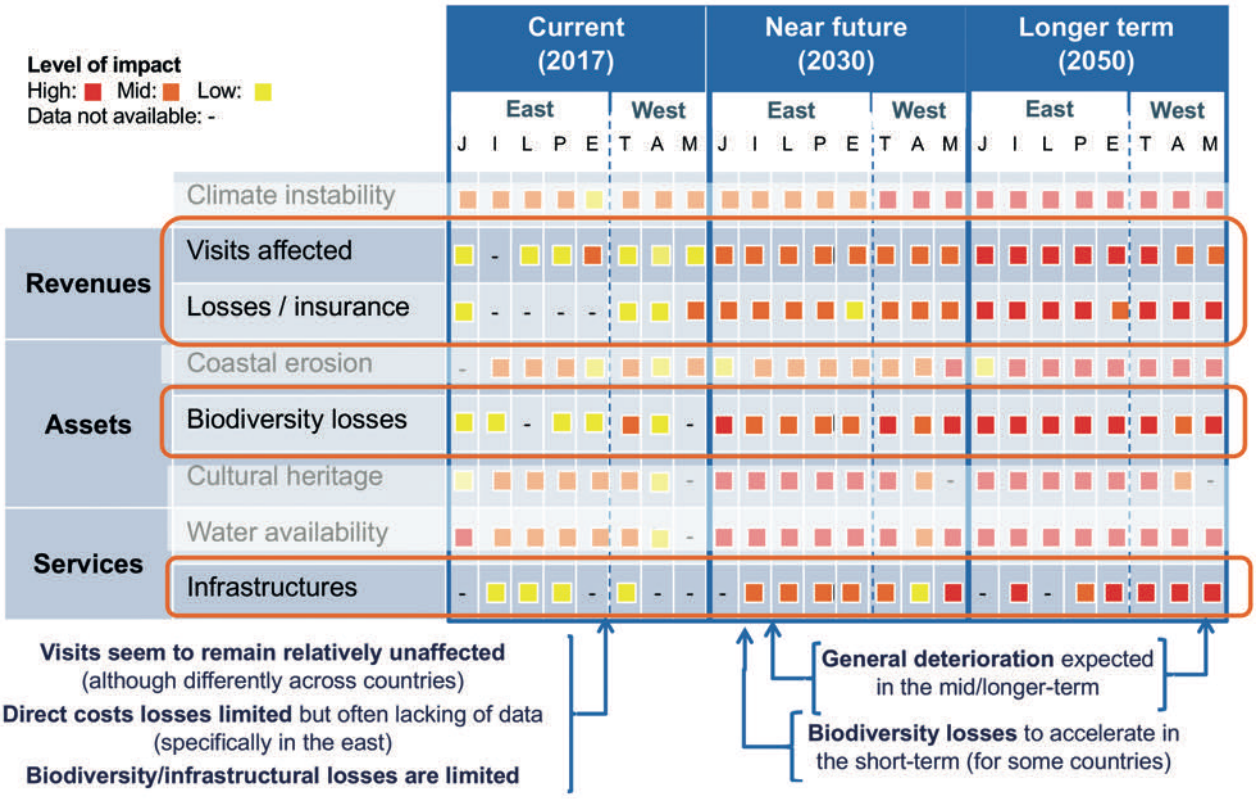

Fig. 3. Areas of impacts of CC not yet perceived as threats by the sector but expected to grow rapidly

Selected examples of these pressures across the assessed countries are provided in the box below.

Box 2. Examples of areas with increasing pressure across selected countriess

Climate change is not currently the main factor of concern for operators in the tourism sector in Southern Mediterranean countries. Although global and regional trends suggest a recovery from the past severe crisis[12], the regional sector is still largely threatened by the persisting geo-political instability[13].

Nevertheless, publicly available evidence suggests impacts of climate change in the longer terms might be disruptive. High temperatures in the tourist areas, for example, may alter the attraction of some coastal areas that rely on moderate weather during the summer season such as Egypt, but also a rising temperature might affect internal demand in the Western Mediterranean, which will require a shift in the current services and business models to capture opportunities and mitigate risks of losses for climate volatility during summer "peak seasons". In countries where diving tourism depends on local ecosystem assets, such as coral reefs in Egypt on the Red Sea, the expected rising water temperature is leading to the bleaching of such asset, a fact that could in turn reduce the sector's attractiveness for many international visitors.

These examples offer some indications on the potential disruptive impact of climate volatility for the sector, in the absence of adequate policy and sectoral responses. They emerge from our preliminary assessment and as such must be further discussed and expanded in future UfM activities with all relevant national and regional stakeholders.

Source: Country Fiches

The intricate interplay amongst those factors, coupled with the fact that these resulting challenges are not perceived as particularly pressing at present and in the mid-term, may nevertheless result in the absence or a limited capacity to foster an adequate policy response in those areas. This is a particularly unfortunate situation, as the direct impacts for the sector are expected to be severe even though not immediately perceived. Moreover, the adequate response to such challenges requires a complex sectoral and crosscutting adaptation capacity, which cannot be fully achieved in a short period of time. As such, the set-up of a strategic framework for action in the sector is required for the policy response to be effective in the mid-to-long term. These aspects will be discussed in the next chapter (Chapter 3), as part of the overall assessment of existing measures in addressing the challenges discussed so far (Chapter 2).

[12] *media.unwto.org/press-release/2018-01-15/2017-international-tourism-results-highest-seven-years*
[13] *www.tourism4development2017.org/knowledge/sustainable-tourism-in-the-mediterranean-state-of-play-and-strategic-directions/*

Chapter 3

Existing policy measures in addressing the emerging challenges

Overview of existing policy measures: strengths and gaps

The number of policy measures to be put in place to address the impacts presented in the previous chapter can be very broad and ideally promoted under the responsibility of a wide range of actors at local, national and regional levels. Given the limited scope of analysis it has been essential to focus the analysis on a relatively narrow but relevant range of measures and strategic policy documents. As in the previous chapter, the analysis provides an overview of the differences and similarities amongst the Eastern (Egypt, Israel, Jordan, Lebanon and Palestine) and Western (Algeria, Morocco and Tunisia) countries[14]. An overview of the findings is provided in Figure 4 below.

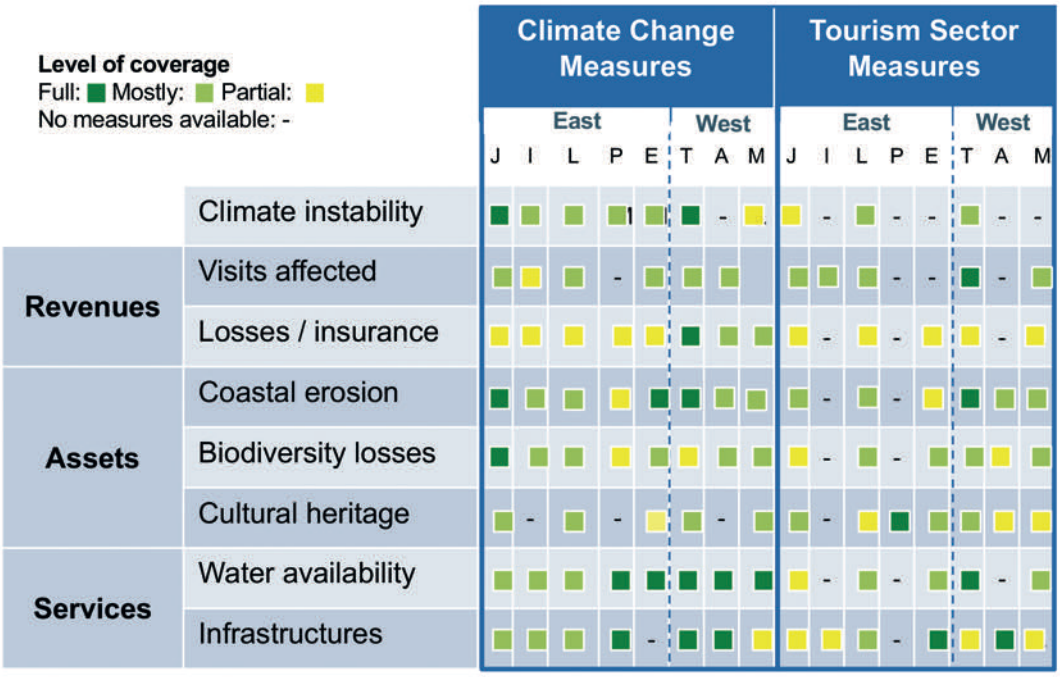

Fig. 4. Overview of the policy measures available across various areas of impacts (revenues, assets, services)
Source: Country Fiches

The policies domains have been initially selected on the basis of those addressing climate change more broadly and those focusing on the tourism sector specifically. In this respect, to make the analysis manageable, the following documents have been scrutinised: i) Climate Change National Policy (i.e. National Communication & Intended Nationally Determined Contributions under the UNFCCC)[15]; ii) Tourism National Strategies (Action Plans, and ad-hoc CC-Tourism adaptation measures)[16]. Commonalities and differences amongst countries are discussed in greater detail in the following sections of this chapter.

Specific strengths and weaknesses that characterise certain countries

A first element of cross-analysis is the extent to which the national tourism policies in each country address, either specifically or more generically, the potential impact on climate change and the resulting pressure due to severe weather conditions, temperature rising and climate volatility. On the west one country shows a

[14] *The visualisation of individual countries does not follow any specific order, as the purpose is to 'compare' and not 'confront' those practices.*
[15] *https://unfccc.int/documents*
[16] *Based on publicly available documents on the countries official websites, and revised by national Focal Points for each country.*

relatively narrow approach to the challenges posed by climate change to tourism, focusing only on a few structural pressures on services and infrastructures, while two countries in the east seem to be lacking of targeted sectoral policy. These gaps specific are illustrated in Figure 5 below.

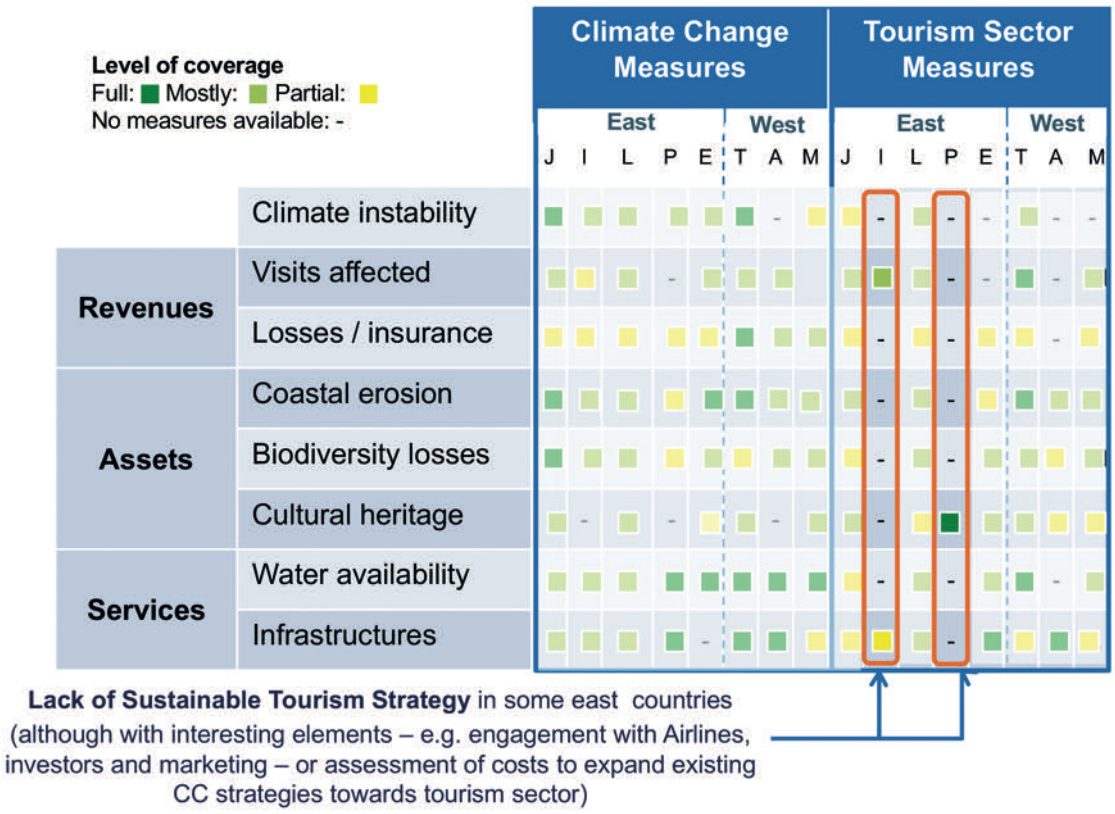

Fig. 5. Climate-related tourism measures remain largely underdeveloped only in few countries

The emerging policy limitations are at times justified by the fragile institutional context of some countries (for instance, Palestine), where nevertheless great efforts have been made in recent years to catch up with climate change policy responses. It is therefore understandable that delays are shown in addressing the specific challenges for the national tourism sector. Conversely other countries where limited climate-related tourism policy measures have emerged, such as Israel, are able to pursue an interesting dialogue with carrier operators to foster new services and address the need for enlarging the number of potential foreign visitors. This is a very interesting and unique policy element emerging across the region, and could be further expanded to address the broader climate change impacts. It is unfair therefore to be categorical in judging the absence of relevant policies, while it is fairer to point out certain strengths and weaknesses emerging country by country.

Moreover, a range of positive policy measures exist across the countries assessed, both on the east and west side of Southern Mediterranean. But even when sectoral strategies refer to climate change, though, they remain at a relatively general level of intervention. Countries like Tunisia and Lebanon, for example, promote relevant linkages between climate change and tourism measures, and signal promising developments for sectoral measures in the region. In Tunisia, an overall strategy addressing the impact of climate change for the tourism sector is in place, although still relatively embryonic and with room for more analytical specifications. However, to be effective and efficient and operational, this framework requires complementary measures, in particular the improvement of institutional coordination, a better visibility among stakeholders of the strategy and action plans put in place, a quantitative and qualitative reinforcement of human resources at different levels. In Lebanon there is an assessment of climate change impacts for tourism as part of 'cross-cutting' measures, but their intervention remains at a relatively general level.

An overview of the main areas of strengths in the two cases is provided in the next figure (Figure 6).
A selection of features and areas of improvements across the practices assessed is provided in box 3 below.

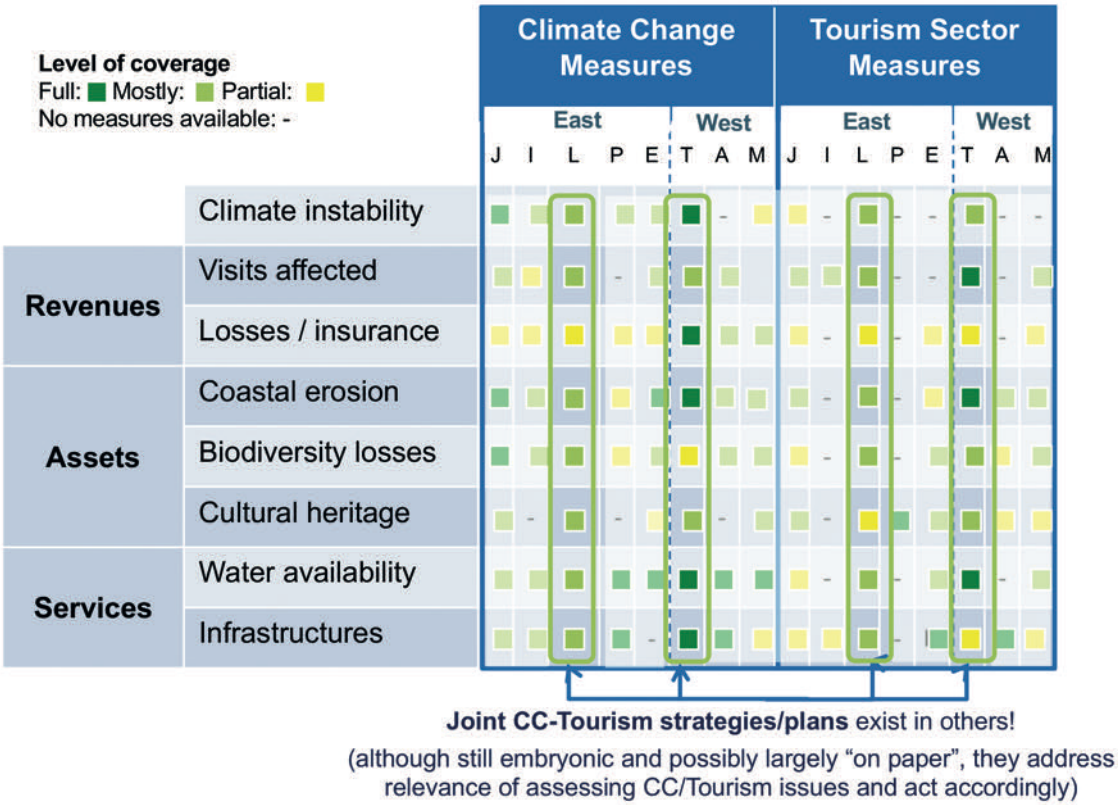

Fig. 6. More effective coverage across various impacts emerges in some countries

Box 3. Examples of measures and stakeholders involved in selected countries

The Tunisian National Adaptation Strategy of the Tourism Sector to Climate Change (SNATCC) has been promoted by the Ministry of Equipment, Territorial Development and Sustainable Development (MEATDD) in 2001, with the aim to: i) reduce the vulnerability of the tourism sector to the adverse effects of climate change, and ii) maintain the competitiveness of the sector by building on sustainable natural and landscape resources. The strategy, supported by GIZ, has been defined through a large participatory process involving all relevant tourism stakeholders, including professionals in the private sector, scientific actors and the civil society at large. This process was supported by the German Cooperation Agency. The document also relied on the main strategic documents related to the effects of climate change since 2010 - National Strategies Addressing Climate Change (SNCC) - on the basis of data from three main sources: (i) the sectors themselves (environment, industry, agriculture, tourism, etc.); (ii) scientific research, and (iii) simulation data, particularly for climate change scenarios (temperature and precipitation, sea-level rise, energy consumption). The strategy appears therefore largely relevant in setting a national strategic policy framework to foster sectoral adaptation and crosscutting actions to address the impact of climate volatility on the tourism sector in Tunisia. It is not clear, nevertheless, the extent to which such strategy has resulted in concrete support actions and measures.

Although to a lesser extent than in Tunisia, the National strategy on Climate Change in Lebanon addressed also the actions related to a number of relevant sectors in the Country. Here, tourism is included but without strong focus nor details specific to the sector (as it appears under "others"), while several of the specific challenges discussed in this paper are largely overlooked. In this respect, the 3rd National Communication to UNFCCC (2016) specifically highlights that "very little work seems to be done to comprehensively understand the impacts of climate change

on the touristic activities and areas". Interestingly, though, the 2015 National Strategy on Rural Tourism - designed to enhance economic opportunities in Lebanese rural areas - focuses on the support of sustainable tourism offers (although leaving skiing and coastal tourism aside). This document could be expanded to include a broader range of tourism related activities and could be better linked to the challenges posed by climate change to the sector, and the possible resulting mitigation/adaptation measures. It is therefore a good start, but more ambitious concrete actions are required to effectively address the challenges discussed in this paper.

Source: Country Fiches

Common gaps and challenges that emerge across the region

In general terms, the tourism measures reviewed seem to be relatively weak in addressing the possible impacts of climate change on essential services and infrastructure for the tourism sector. Although the extent to which existing policy measures are effectively addressing the areas of impacts discussed in the study varies from country to country, in fact, these are either non-existent or partial.

As discussed, some impacts are potentially addressed by 'cross-cutting' climate change measures. But the relevance of such measures for the tourism sector is often limited, with the strongest support provided toward addressing coastal erosion, water availability and infrastructural needs/damages. Climate impacts on water availability and infrastructural pressures are better addressed by Western countries, while impacts are mostly experienced (and expected to grow faster in the future) on the Eastern side, where policy response appears weaker. Also, and worryingly so, the impact of climate change on tourism assets, such as biodiversity - including pressure of non Indigenous species suspected to be related to climate variability - and cultural heritage sites, seems to remain only partially addressed by existing climate change measures and often neglected by tourism measures. Gaps and limitations are illustrated in Figure 7 below.

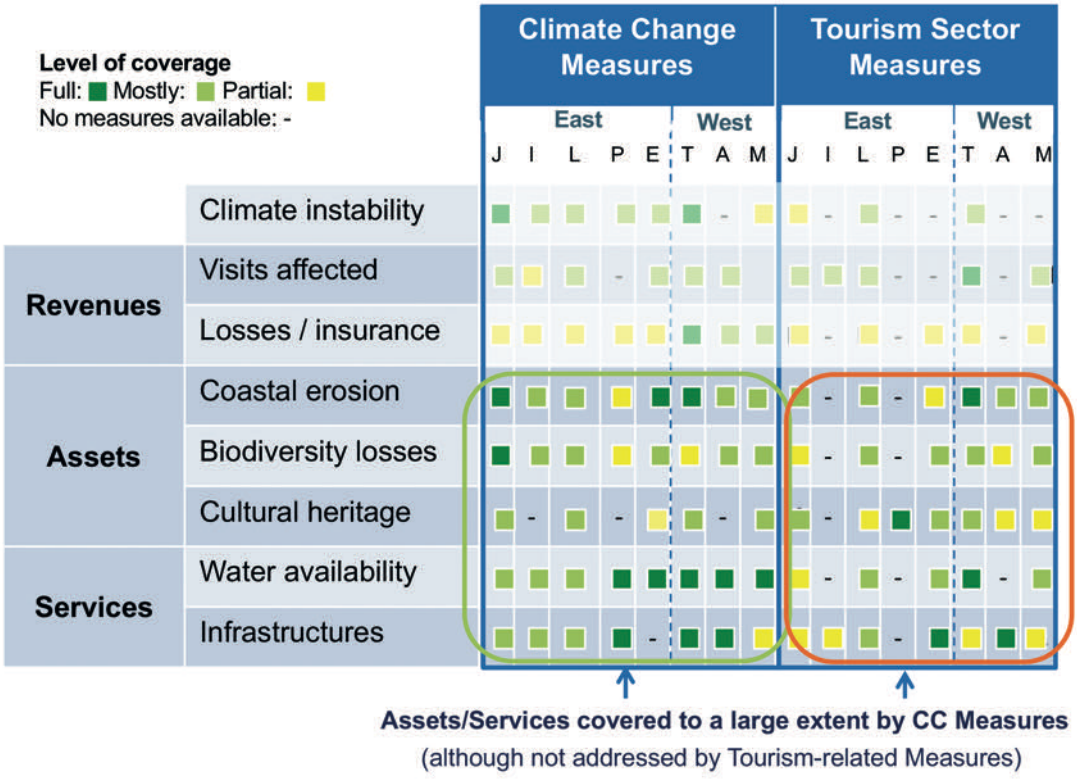

Fig. 7. Impacts on tourism services and assets are mostly addressed through climate change measures

A selection of features and areas of improvements of the practices assessed is provided in Box 4 below.

Box 4. Examples of measures and stakeholders involved in selected countries

A number of measures addressing climate change are indirectly providing a basis to support adaptation measures relevant for a sustainable development of the sector, including greater resilience of local infrastructure and ecosystem assets which are pivotal for the sector.

In Algeria, for example, the National ICZM strategy (2015) is clearly identifying coastal erosion as one of the main risks in coastal zone and five priority actions have been dedicated to this issue. These include: i) regulation in the occupation of coastal zone at 10/300/800/3000m from the sea; ii) ICZM strategy with component dedicated to coastal risks and coastal erosion; iii) monitoring programme of progress of erosion and related impacts; iv) evaluation of losses and damages caused by coastal erosion, including on tourism related infrastructures; v) adaptation measures to climate change impacts on coastal zone such as SLR, erosion, submersions (harbours, public works, industry, tourism). This is certainly a relevant set of measures, which could be better tailored to the needs and challenges of the tourism sector by expanding the measures towards a more specific and tailored sectoral approach.

Similarly, Morocco has identified coastal erosion as one of the main coastal issues, especially for its implications on tourism related infrastructure. Related measures include: i) removing beach sand and riverbed aggregates to be used as building materials; ii) restricting the urbanisation of the coasts (strict control of coastal building development); iii) introducing beach monitoring programmes, protection and regeneration of some of the remaining dunes iv) strengthening of watershed erosion protection programme through upstream of dams. These are important activities but should be designed in close coordination with all stakeholders in the tourism sector with the aim of strengthening their resilience and sustainability and avoiding measures which could further affect and deteriorate local touristic attractions. Such measures will contribute to a common focus on ecosystem and environmental sustainability as well as the promotion of sustainable and long-term local jobs for the sector.

With respect to the protection of cultural heritage national sites, only Palestine put specific efforts on addressing issues related to flood and erosion of such relevant assets, while in general the focus is on the broader preservation or the valorisation of such sites. This is therefore an area where further efforts should be put, given the high exposure it is expected to face and the high relevance for touristic purposes.

Source: Country Fiches

A very critical area of exposure for the tourism sector in all countries remains the threats that climate volatility poses to the revenues and the longer-term profitability for the sector. The reference to potential impact of climate change on the sector remains largely non-existent. While the focus of sectoral measures remains on the more general issue of boosting the 'attractiveness' and global competition, in fact, the relevance of climate volatility that is increasingly reshaping the tourism sectors in the region seems to be consistently neglected. An overview of the described gaps in all assessed countries is provided in Figure 8.

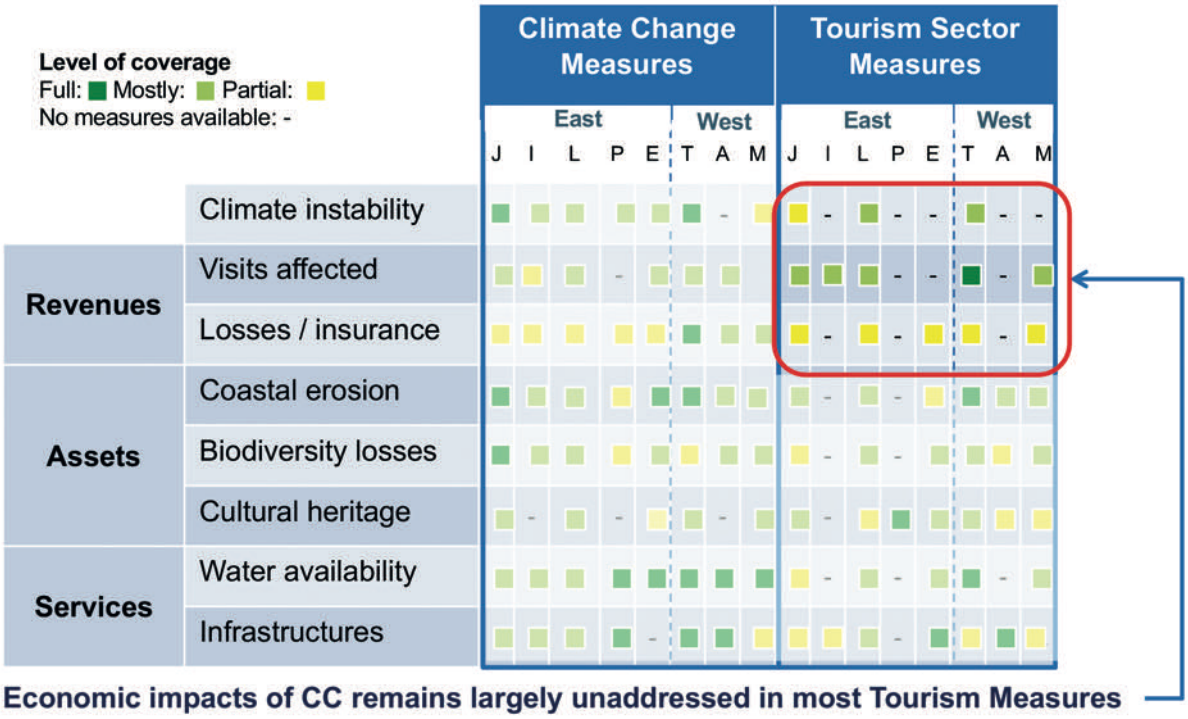

Fig. 8. Direct Impacts (losses/visits) and strategic analysis of impact on the sector are largely unaddressed

Worryingly, the growing pressure on the turnover of operators in the sector resulting from direct costs and losses due to climate change effects remains largely unrecognised. This is the case for both Tourism and Climate Change measures, with some notable exceptions, as illustrated in the Figure 9 below.

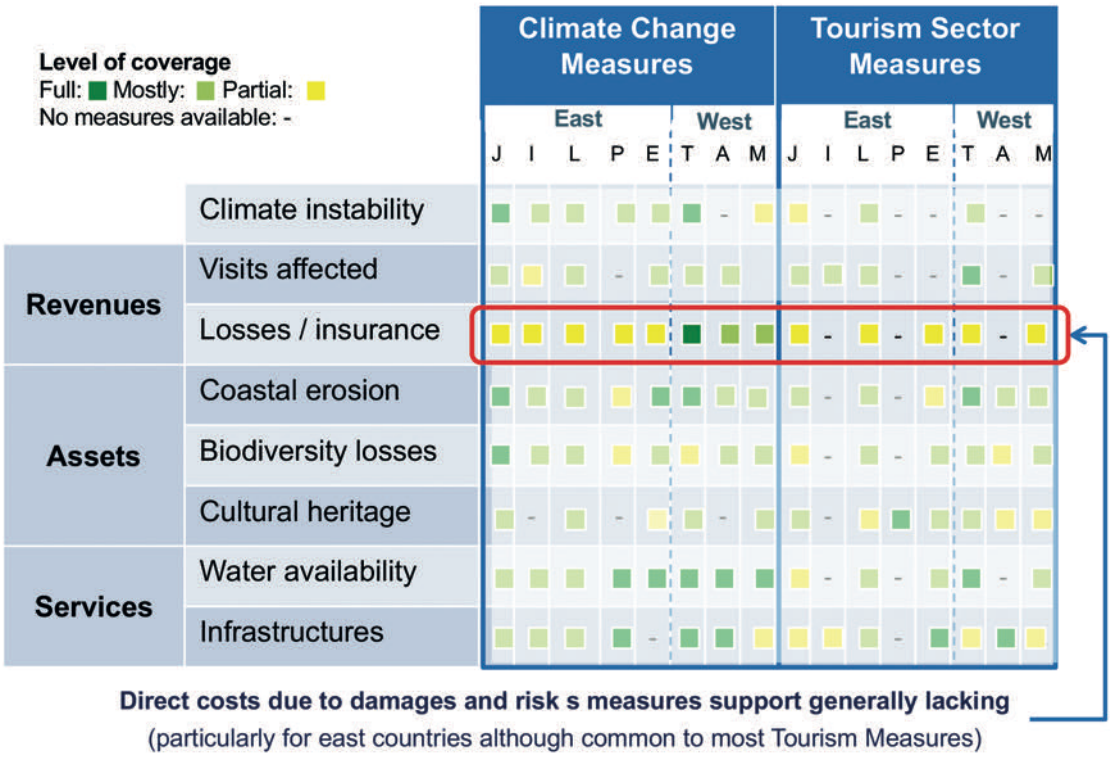

Fig.9. General lack of clear support measures addressing losses induced by Climate Change impacts

A selection of the interesting features and areas of improvements amongst the practices assessed is provided in Box 4 below, including the data used and the process set-up to engage with local stakeholders.

Box 5. Examples of measures and stakeholders involved in selected countries

The National Strategy on Climate Change in Tunisia, promoted in 2012 by the Ministry of Environment and supported by GIZ, includes a number of measures that address the growing risks of climate change related to the agriculture sector, which could also provide a reference for the tourism sector. In particular, Action 12, on "Insurance against effects of extreme climate events (economic and financial tools)", is the result of the discussion between insurance providers, the Ministry of Agriculture and the Ministry of Finance. The measure consists of a specific insurance to cover the risk of increasing extreme climate events resulting from climate change that may impact local agriculture value-chains. These risks can be either in isolated areas (flooding) or more widespread (extreme events, drought affecting an entire region for example). For isolated natural damage affecting farms, this involves the use of private insurance and reinsurance services covering the financial risks brought about by climate change. The optimal coverage profile for natural damage typically rests on solidarity between policyholders and insurers, measured premiums, sufficient market capacity and appropriate prevention. For more widespread natural damage (drought), an insurance system indexed to the drought index is recommended. Compensation is paid when a predefined climatic event, of specified severity, has occurred. In such cases, the state may review support measures.

In Israel a series of measures are adopted to: i) promote investments in the country's hotel industry – e.g. by encouraging capital investment, providing grants to projects in the hotel industry, maintaining contact between investors, Government offices and other authorities, providing information on capital investment and assisting investors in the implementation of their projects; ii) adopt a marketing programme for the creation of a tourism demand for Israeli destinations, and iii) collaborate with international airlines to encourage new direct routes to Israel. These activities are not necessarily focusing on the challenges described in this paper, as they are addressing tourism competitiveness in general, nevertheless they could provide a framework through which a better way of identifying and addressing the possible vulnerabilities of the sector to possible future impact of climate change.

Engagement with international carrier operators, for example, might help discussing possible issues of increasing prices due to climate mitigation measures - and more broadly challenges in the economic models of low-fair air transport - and discuss more sustainable means of multi-modal transport across the country and maybe even across the Southeast Mediterranean (i.e. in coordination with neighbouring destinations). Importantly, Israel is aware of its "tourism gap" regarding climate change policies, and a list of possible/potential measures is foreseen to address such gap, namely by: i) addressing vulnerable areas not yet studied within the national framework including tourism; ii) conducting economic research and business cases at sectoral level; iii) conducting research on climate change impacts on tourist decision-making; iv) conducting research on areas of uncertainty and adaptation costs and policy, including the insurance sector, and v) achieving a balanced approach between tourism and conservation of local resources and heritage sites (including issues related to climate change in this areas).

In general, therefore, the countries assessed seem to be aware of the gaps (technical and financial, but also in terms of policies). Some of them have even calculated the related costs and have designed optimised climate change national strategies to afford as many measures as possible (e.g. Palestine). It would be therefore important to further discuss and assess such broader gaps and the example of practices emerging throughout the region, so as to provide a reference for a common policy framework and specific measures to be promoted for a more resilient and adaptive tourism sector across the Mediterranean Sea basin.

Source: Country Fiches

Chapter 4

Need for action for a fast-growing and the relatively ignored challenge

A mismatch between the identified impacts and the existing sectoral response

As discussed in Chapter 2, the socio-economic impacts of climate change are expected to be substantial for the tourism sector affecting all countries assessed in this paper. Even when currently limited, in fact, **impacts will exponentially grow in the (near) future. Adaptation to such impacts is therefore a strategic need** for operators in all countries, so as to ensure a resilient, innovative and sustainable sector.

Local operators are nevertheless not fully aware and/or able to respond to such challenges, due to the interplay of currently limited perception of such impacts by local operators and their limited capacity to plan in the longer term (beyond an annual, seasonal if not even quarterly timeframe). The sector is in fact largely fragmented between small and micro operators, which are poorly networked and often lacking the financial means and managerial capacity needed for longer-term planning. Some degree of **"market failure" in the sector calls therefore for an efficient and effective policy intervention.**

And yet, as emerging from Chapter 3, **policy response to such challenges - and support to the sector's adaptation and response capacity to climate change impacts - is nowhere near to be optimal at present.** Some good sectoral practices have emerged as discussed in this paper, although they are still largely partial and often more existing "on paper" than "in practice". **Good practices may also emerge in the context of general climate change policies, but are not specifically translated into sectoral tourism policies, and vice-versa.** Moreover, although countries are mostly aware of the existing gaps, it is challenging for them to foster integrated policies for a sector remaining highly fragmented into small or even micro enterprises and in areas where encompassing sectoral policy dialogue is still relatively limited.

Regional actions and initiatives needed to strengthen local responses

The main areas of policy gaps and concerns in the country assessed appear to be the following:

- **Lack of a strategic vision in acknowledging and addressing the potential impacts of climate change** in reshaping future visits in each country and across the region, also resulting from the high fragmentation and poor networking and cooperation of (small and micro) stakeholders in the sector. Impacts to address include the effects of climate volatility in threatening seasonal visits, as well as the effect on international visitors from the potential price rises in long- and mid-haul air transport.
- **Lack of capacity and capability in the mitigation of business risks and costs resulting from the damages and losses caused** by climate change impacts (infrastructural damages, missing "seasonal gains", etc.) - some experiences emerge in relation to other sectors (e.g. agriculture) or in sectoral policies in other countries across the Mediterranean (including northern countries), but cross-fertilisation is limited.
- **Limited if non-existing cross-reference of climate change/tourism policies reducing effective integrated policies** - some of the relevant threats posed by climate change to tourism operators and stakeholders are potentially addressed through crosscutting policies (coastal erosion, infrastructural resilience, ecosystem preservation, etc.), but the full support to tourism is hindered by a lack of specific inclusion of the sector in climate change policies.

Support actions can be fostered by sharing a number of existing positive practices across the region:

- Local practices at city-level in the region and beyond - although beyond the scope of this paper;
- National good practices which can be further specified and improved - as discussed in this paper;
- Additional regional good practices - such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF) ;
- Other actions to be discussed in coordination with regional and international organisations (EU, UNEP-MAP, UN-WTO on general tourism adaptation strategies, ICAO and IMO for engaging with Air and Maritime Transport Operators, UNESCO and IUCN with respect to heritage sites preservation, etc.).

[17] *climate-adapt.eea.europa.eu/metadata/guidances/guide-to-climate-change-adaptation-in-cities/11237802*
[18] *www.ccrif.org/content/about-us*

Chapter 5

Conclusions and recommendations

The assessment of relevant publicly available sources confirms that:

- **Tourism is amongst the most important economic activities** for all countries assessed, both in terms of jobs and economic returns both at the present and potentially in the future;
- **Socio-economic negative impacts of climate change for the sector are nevertheless substantial;**
- Even if currently limited, in fact, **such impacts are expected to exponentially grow** in the near- (2030) to longer-term (2050) future;
- **Adaptation is therefore a strategic need** for operators in the sector in all countries assessed, while climate change threats could also provide an opportunity for innovation across the tourism sector's socio-economic ecosystem and instigate a way to change models that are not sufficiently resilient;
- **Nevertheless, the strategies and action plan publicly available**, both for the sector and addressing climate change more in general, **do not take such challenges and needs into adequate account.**

Furthermore, our assessment also suggests that:

- **Operators are largely unaware or unable to adequately respond** to such challenges;
- Some degree **of "market failure" calls for public intervention, but it appears that planners and policymakers are also often unaware of such challenges** - at least in existing documents.

As a result, as emerging from the review of publicly available policy measures:

- **Policy response is currently nowhere near to the level required to support sectoral adaptation.**

It is therefore pivotal for the Union for the Mediterranean (UfM) to foster greater exchanges and more concrete actions involving local and regional sectoral stakeholders across the Mediterranean. The main recommendations for the UfM follow-up are therefore the following:

- **Valorise and disseminate the findings of this paper** and other emerging sources of information and good practices throughout the region, as a basis for in-depth and fine-tuned analysis;
- **Promote a regional dialogue through a Regional Workshop** with experts, practitioners and planners, as well as policymakers at the local, national and regional levels;
- **Engage more actively with decision and opinion-makers** in the region, including national and regional media, the private sector, NGOS/CSOs, authorities and institutions - including regional associations and network of operators and sectoral stakeholders, such as Eurochamber[19] or the International Chamber of Commerce with whom UNFCCC is in dialogue to achieve the Paris Agreements Goals[20];
- **Promote specific research, studies and business cases** on economic costs of climate change on the sector and returns on investments (RoI) of sectoral adaptation within and across countries (Jordan ecosystem assessment), including ways to shift current value-chains and ecosystems into resilient, profitable and sustainable models (e.g. distributed, less dependent on heavy infrastructures, etc.);
- **Foster more effective and data-based sectoral measures within and across the Mediterranean countries,** including the link of "early warning systems" to the possible range of impact it can cause to the sector, as well as the access to public support and private investments for strategic sectoral adaptation - to foster innovation, resilience and sustainability of the sector in the entire sea basin;

[19] *http://www.eurochambres.eu/Content/Default.asp?*
[20] *https://unfccc.int/news/innovative-ideas-in-action-to-get-on-track-to-paris-goals*
[21] *Also with reference to the UNWTO 2010 statement on the mitigation of greenhouse gas emissions from air passenger transport*

- **Encourage adapted management responses** in the light of the most up-to-date knowledge on tourism site vulnerability and the latest climate knowledge and projections, including through the:

    - Identification and promotion of good practices in insurance incentives for damages and losses, as developed for other sectors (e.g. agriculture) or in other regions (e.g. EU countries in the Mediterranean);
    - Engagement with Air and Marine Transport Operator to address sustainable means of transport[21], and promotion of regional alternative transport means with higher local value-added (e.g. small-scale cruising);
    - Fostering greater availability and better use of Climate Change adaptation funds and financing in dialogue with public and private investors across the region and more globally, to accelerate the sectoral innovation;
    - Promotion of Integrated Coastal Zone Management (ICZM) and other Spatial Planning tools including the tourism sector to improve the resilience of sectoral activities and maintain high quality of ecosystem services
    - Development of practices linking climate change "early warning" systems to tourism socio-economic impact.

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