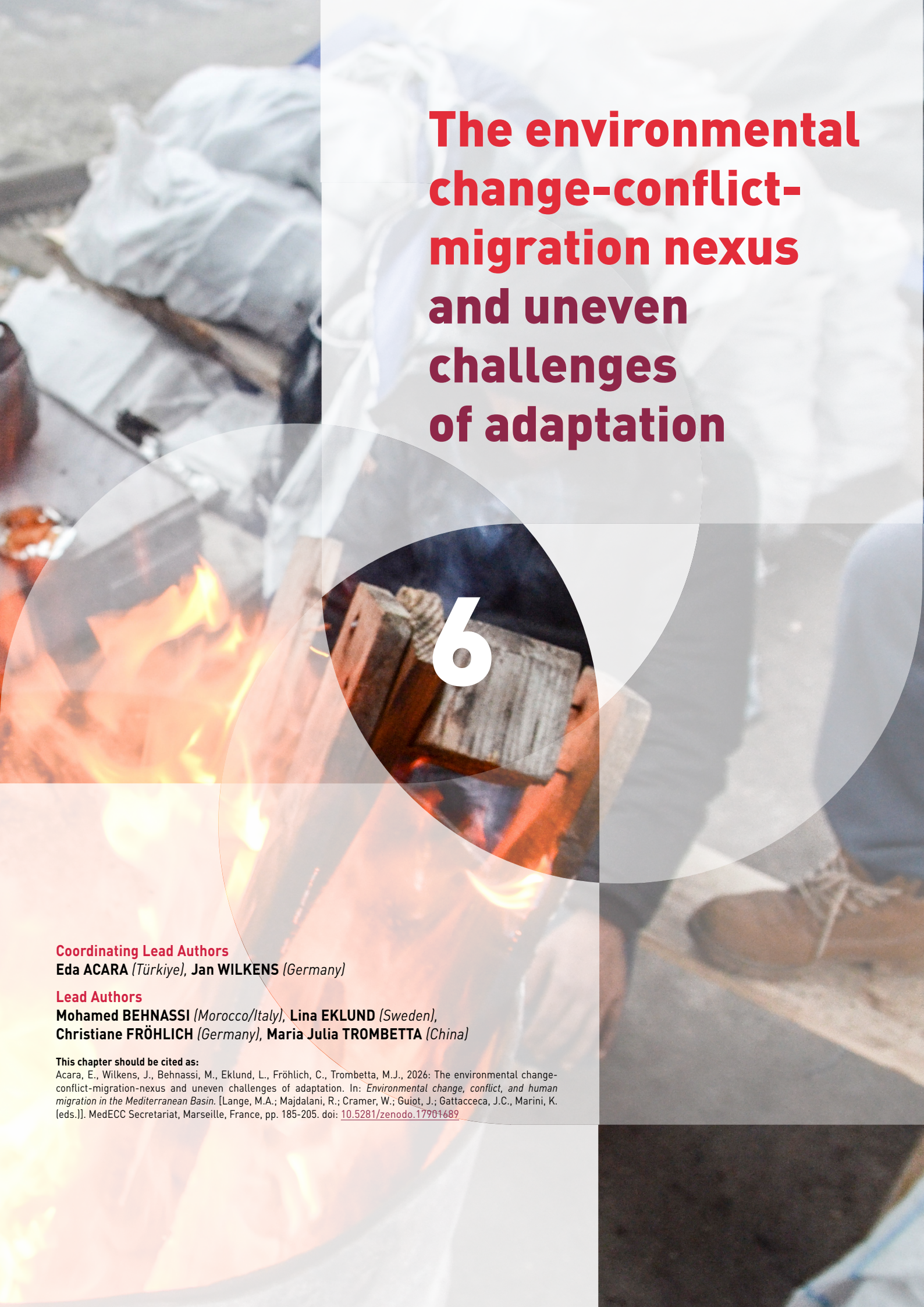




The environmental change-conflict- migration nexus and uneven challenges of adaptation

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Coordinating Lead Authors

Eda ACARA (Türkiye), Jan WILKENS (Germany)

Lead Authors

Mohamed BEHNASSI (Morocco/Italy), Lina EKLUND (Sweden),
Christiane FRÖHLICH (Germany), Maria Julia TROMBETTA (China)

This chapter should be cited as:

Acara, E., Wilkens, J., Behnassi, M., Eklund, L., Fröhlich, C., Trombetta, M.J., 2026: The environmental change-conflict-migration-nexus and uneven challenges of adaptation. In: *Environmental change, conflict, and human migration in the Mediterranean Basin*. [Lange, M.A.; Majdalani, R.; Cramer, W.; Guiot, J.; Gattacceca, J.C.; Marini, K. (eds.)]. MedECC Secretariat, Marseille, France, pp. 185-205. doi: [10.5281/zenodo.17901689](https://doi.org/10.5281/zenodo.17901689)

Chapter 6

The environmental change-conflict-migration nexus and uneven challenges of adaptation

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Executive summary

Environmental change in the Mediterranean region exacerbates intersectional inequalities and poses challenges to existing governance structures, particularly with regard to human mobility and conflict. The complexities of these issues are compounded by a lack of empirical studies, methodological shortcomings, and limited access to data, hindering a comprehensive understanding of the phenomena. Addressing these challenges requires collective and collaborative efforts across local, national, regional, and international scales.

Migration is increasingly seen as a form of adaptation that operates across these various scales, while empirical evidence in the Mediterranean challenges the notion of migration as adaptation. To effectively tackle these issues, addressing the root causes of vulnerability, enhancing adaptation capacities, and promoting transformative adaptation strategies is crucial. However, environmental change in the Mediterranean has been securitised, prioritising certain threats such as conflict and migration over others, which may skew policy responses and resource allocations.



6.1 Complexity of interactions between environmental change, forced migration, and conflict

The environmental change-conflict-migration nexus is defined by context-specific interrelations of material and discursive conditions for involved and affected actors. Material conditions at this nexus encompass a range of issues, including environmental change, governance structures comprising legal regimes, and place-based vulnerabilities. Environmental change is happening at such a pace that it is eroding the resilience of human adaptability and intensifying significant social and environmental disruptions, posing a threat to human life and livelihoods. Water availability, droughts, sea level rise, pressure on ecosystems, and health are major areas of concern (*Chapter 3*). These changes can exacerbate existing political, social, economic, and ecological tensions, shaping inter- and intra-state conflicts and cooperation, and have therefore been described as ‘threat multipliers’ (*Chapter 4*). While the concept of ‘threat multiplier’ has been seen as useful in raising awareness about climate-security linkages, it risks becoming an empty signifier in policy debates by simplifying causal relationship between climate change and conflicts. Against this background, this chapter analyses the multifaceted landscape of conditions and further dynamics that are central in shaping the environmental change-conflict-migration nexus. These include current governance structures (*Section 6.2*) and legal regimes (*Section 6.3*), as well as place-based vulnerabilities, which are context specific (*Section 6.4*) and characterised by intersectional structural inequalities (*Section 6.5*). At the same time, material conditions are shaped by discursive constructions in which governance objects are framed in particular ways. This can be observed in narratives about environmental or climate migration (*Section 6.1.1*), and more prominently by turning climate into a security issue [securitisation⁷³] (*Section 6.2*). Since the 1980s, there

has been a trend to frame forced migrants⁷⁴ as a threat to human security, illustrated by the terms ‘climate refugee’ and ‘environmental refugee’ (Boas et al. 2019). The common understanding is that such environmentally-induced migration needs to be addressed by increasing resilience (Methmann and Oels 2015) and/or by stopping migration movements at their origins.

6.1.1 Limitations of available information, data, and sources on key dynamics for the nexus

The securitisation of climate change impacts often circumvents or disguises political power dynamics and insufficient governance structures, which are nevertheless important for the nexus. Here, country-specific information and data are often still missing. Only very limited information and data are available regarding the implications of renewable energy production and resource extractivism, a term used to describe a set of practices that enable resource exploitation that does not account for sustainability nor for equitable distribution of benefits. This issue is of growing importance for many Mediterranean countries, especially in the south of the Mediterranean. Although it constitutes another potential source of conflict beyond other inter-state disputes, little research exists on its linkages to displacement and migration dynamics. While it is often assumed that renewable energy facilities offer economic opportunities for countries in the region, recent developments indicate that they can also have a series of negative impacts on livelihoods, depending on the patterns of implementation (Hamouchene and Sandwell 2023). Renewable energies at scale are highly dependent on land use and also require significant resources, such as water, which could become a source of growing tension, particularly in countries of the southern Mediterranean, where agriculture is a key sector for national economies (Waha et al. 2017). Renewable energy power plants have the potential to significantly reduce CO₂

⁷³ The concept of ‘securitisation’ is used in this Analysis as defined in international relations and political science, particularly within the framework of the Copenhagen School (Buzan et al. 1998). Securitisation refers to the process through which an issue is constructed as an immediate and existential threat by a powerful actor—such as a government or political leader—through a speech act. This construction must be accepted by a relevant audience to legitimise the use of extraordinary measures beyond normal political procedures. As used in this Analysis, securitisation concerns the construction of issues as security threats, not the financial meaning of the term (i.e. the pooling and repackaging of assets into tradable securities).

⁷⁴ Throughout the report, the term ‘involuntary’ migration is preferred. In this chapter, the term forced migration is used as an essential concept that stems from the literature, as involuntary migration does not capture some of the points made in this chapter and in the academic literature used.

emissions, but they reshape land-use dynamics due to required space for construction and operation. Although research is still limited, existing studies underline that the impacts of constructing renewable energy facilities on landscape, land tenure, and land-use patterns can be significant, and have the potential to undermine the authority of local communities (Lamhamedi and de Vries 2022). Given the recent nature of these dynamics, little research exists that directly addresses the nexus, but it is important to note that research on renewable energy in countries around the Mediterranean highlights potential conflicts with the possibility of shaping displacement in the future.

This also shows that while both environmental and climate change are dynamics of increasing relevance for the Mediterranean region, the related impacts are uneven across southern shore countries and rural and urban areas, as well as on the sub-state level for different social groups. However, studies on the nexus of environmental change, conflict, and displacement are inconclusive as to the causal relationships between the nexus nodes, which makes it difficult to predict the long-term consequences of such complex and uncertain linkages, with medium- and long-term implications remaining mostly projections. This uncertainty is important to consider in the face of the prevailing understanding of climate-related migration as a national security issue. This has been of particular relevance since the 1990s, when natural scientists working on climate change started to project very high numbers of 'environmental refugees' or 'climate refugees' (see Myers 1997; Reuveny and Moore 2009). These underlying Eurocentric patterns of knowledge production have generated assumptions of causality at the nexus of environmental change, conflict, and (forced) migration that have been rebutted by recent scholarship (Brzoska and Fröhlich 2016; Selby et al. 2017; Scheffran 2020; *Chapters 4 and 5*). Additionally, most existing studies in the region focus on the relation between slow onset environmental changes and migration/displacement, such as sea level rise, droughts, and soil degradation. This research, mainly consisting of single-country case studies, underlines the complex relationship between environmental changes and migration, the diversity of migration patterns, including the temporality of migration, and the fact that migration is often seen as a last resort; since migration induced by environmental changes often leads to a

worsening of individual conditions, as shown in the case of Egypt (Warner 2010). While environmental change is rarely identified as a prime reason for migration, it can shape already-existing patterns of migration induced by conflict. Limited evidence suggests, however, that in the context of this nexus, migration can also be seen as a form of adaptation by affected households. This applies especially in cases where food and water security are contested, and remittances can be a potential solution. Case studies further highlight context-specific circumstances and diverse ways of perceiving migration as adaptation (see Afifi 2010 for Egypt; Sobczak-Szelc and Fekih 2020 for Tunisia). However, while migration is increasingly being discussed as a form of adaptation in the context of environmental change (Gemenne and Blocher 2017; İçduygu and Gören 2023), including in the IPCC Sixth Assessment Report on impacts, adaptation, and vulnerability (IPCC 2022a), current evidence highlights that it might not be a suitable or sustainable adaptation strategy (Vinke et al. 2022). This tension between theoretical discussions and empirical evidence shows that framing adaptation in the context of human mobility tends to neglect the political, economic, and social dimensions of migration by merely understanding migrants as victims of environmental change, and as a challenge for national security (Ransan-Cooper et al. 2015). Instead of understanding migrants in the context of environmental change and conflict as political subjects whose norms, identities, and perceptions about mobility and adaptability could shape policy strategies, current dynamics are characterised by a lack of supportive governance structures. As assessed in *Chapters 3, 4, and 5* of this report, the lack of governance structures and mismanagement are critical in understanding the relationship between environmental hazards, environmental change impacts, conflict, and migration.

This chapter therefore contextualises migration as adaptation within these intricate interactions in order to highlight current challenges and trajectories by drawing on different ideal types of adaptation, namely coping, incremental, and transformative adaptation, as well as maladaptation. Adaptation is often understood as a 'local' phenomenon or practice and, as part of the United Nations Framework Convention on Climate Change (UNFCCC), is subject to national adaptation plans. The chapter will discuss how migration as an adaptation strategy spans local, national, regional, and international scales. It

also underlines that adaptation is a highly socially demanding process, and not a mere functional option for migrants facing environmental change and conflict. The chapter examines adaptation gaps, alongside the policies that are currently in place or lacking in the Mediterranean region, and the vulnerabilities that result from these dynamics.

6.1.2 Migration, adaptation, and the environmental change-conflict-migration nexus

The IPCC Sixth Assessment Report on impacts, adaptation, and vulnerability identifies a high probability for new and existing multi-scale conflicts that might be transformed or exacerbated by increasing climate risks (IPCC 2023). Although evidence summarised in this report shows that there are uncertainties over how conflicts are shaped by climate risk, a densification of conflicts would put an additional burden on governance systems, already exhausted by conventional challenges. In addition, such shifts would not only threaten human and natural systems but also constitute emerging drivers of human insecurity and displacement both within and across national borders. Indeed, (violent) conflicts and human displacement are among the major social consequences of environmental change, environmental downgrading, and resource scarcity.

On the one hand, the report recognises that migration can be considered a form of adaptation that reduces risks and the consequences of climatic and non-climatic stressors when it is voluntary, safe, and orderly (Cissé et al. 2022). On the other hand, it underlines that the quantity and quality of existing data required to bridge the gap between data, science, and policy approaches in addressing human mobility challenges in disaster and environmental change contexts remain limited. While there is a common understanding that increasing extreme weather events, particularly floods and droughts, but also slow onset events, such as sea level rise, are likely to increase displacement, and that limited adaptive capacities contribute to involuntary migration, 'compared to other socio-economic factors the influence of climate on conflict is assessed as relatively weak' (IPCC 2022b, p.15).

The complex relationship between environmental change adaptation, migration, and conflict is therefore not only seen by the fact that neither climate change nor conflict is linked in a straightforward manner, but also by the observation that the meaning of climate change adaptation is contested depending on specific contexts. The goal of environmental change adaptation, as with mitigation, is to reduce risks, strengthen resilience, and address vulnerabilities in the short and long term (Huang-Lachmann and Guenther 2020). However, there are significant differences in the ways environmental change affects people in different places and contexts. There are also diverse ways of understanding what adaptation would mean for analytical and practical challenges with regard to a particular setting. International frameworks, such as the Paris Agreement (UN 2015), the Sustainable Development Goals (SDGs, UN General Assembly 2015), and the Santiago Network for Loss and Damage⁷⁵, established at UNFCCC COP 25 (December 2019), underline that effective adaptation depends on effective mitigation, sufficient financial and other resources to increase adaptive capacities, and active coordination and planning (UNEP 2023). While these aspects can be understood as general conditions for climate change adaptation, they do not provide specific guidance to plan or implement adaptation efforts (IPCC 2022b, p.26). This also applies to displacement and forced migration in the Mediterranean region.

Given the specificity of spatial settings, such as coastal, urban, and rural systems, research on adaptation has analysed different adaptation pathways or ideal types in order to identify sustainable and unsustainable ways of adapting to environmental change (Gresse et al. 2023). In this context, ideal types of adaptation have been identified as coping, incremental adaptation, and transformative adaptation (Fedele et al. 2019). Coping is usually a result of limited resources and awareness of the demand for change and leads to practices that largely do not alter given systems (Kates et al. 2012; Fedele et al. 2019; Gresse et al. 2023). Incremental adaptation practices are implemented by addressing selected climate risks step-by-step. They might be effective in the short-term or with regard to a particular risk. However,

⁷⁵ <https://unfccc.int/santiago-network>

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they may also risk reproducing unsustainable practices (Wakefield 2019). Transformative adaptation contrasts with mere risk management and encompasses fundamental changes to a given system by establishing new human-environment relationships (Adger and Jordan 2009; O'Brien 2012; Feola 2015; Fedele et al. 2019; Gresse et al. 2023). The diversity of ways in which these different adaptation pathways materialise are summarised in *Table 6.1*.

This differentiation of adaptation pathways highlights that a particular risk of adaptation practices is maladaptation. While adaptation is not only urgently needed, but also already happening, a growing number of studies highlight a lack of clarity in understanding successful or effective adaptation.

Maladaptation occurs when adaptation practices or processes lead, often unintentionally, to a situation that enhances vulnerability to environmental change, instead of reducing it (Schipper 2022). This is particularly true in the context of displacement and forced migration in the Mediterranean region. In most cases, migration in the region is an attempt to cope with various risks, especially when climate change and environmental degradation exacerbate vulnerabilities due to existing socio-economic risks and conflicts. Several examples of these vulnerabilities are presented in *Chapter 5*. Various drivers of forced migration intersect with threats connected to environmental change (Mencütek 2018). While there is a substantial lack of data on the climate risk, conflict, and migration nexus for various countries in the region, recent research highlights

Table 6.1 | Examples of climate adaptation measures in coastal, urban, and rural systems. Source: adapted from Gresse et al. (2023, p.63).

Type of adaptation	Coastal systems	Urban systems	Rural systems
Coping	Beach nourishment to restore sandy coastlines, maintenance dredging in artificially deepened estuarine channels (van Maren et al. 2015).	Air conditioning of buildings to adapt to extreme heat (e.g. Lundgren-Kownacki et al. 2018).	Mitigating the impacts of extreme events such as droughts or storms, e.g. with reduction of livestock size (Venot et al. 2010; Pili and Ncube 2022) or removal of damaged trees (DeWalle et al. 2003).
Incremental adaptation	Climate dykes with wide dyke base allowing for future dyke-height adjustment in case of a further sea level rise (MELUND 2022).	Modification of urban land cover to mitigate the urban heat island effect (Akbari et al. 2016), e.g. green roofs (Clar and Steurer 2021).	Expansion, intensification, and modification of production systems (Zullo et al. 2011; Kachulu 2018; Lara-Estrada et al. 2021; Bhalerao et al. 2022).
Transformative adaptation	Active storm-surge barrier control mitigating consequences of sea-level rise and tidal pumping of sediments (Masterplan Ems 2050 2022), Sand motor nourishing for eroding sandy coastlines (van den Hoek et al. 2012; Brière et al. 2018).	Water-sensitive city concept as an integrated approach for water management uniting water supply, sanitation, flood protection, and environmental protection strategies (Wong et al. 2020).	Shifts to healthier diets in combination with modified agricultural production and trade patterns (Zech and Schneider 2019; Chan et al. 2022); large-scale conservation and restoration of degraded peatland and floodplain ecosystems (Jantke et al. 2016; Heger et al. 2021; Temmink et al. 2022).



that the combination of limited resources available to affected people and existing governance dynamics turns migration into a form of coping and, potentially, maladaptation. In particular, the lack of coordination and cooperation among different stakeholders, policy and land use planning, as well as other governance practices, undermine transformative adaptation strategies that would effectively address vulnerability as a risk multiplier for conflict. The contested nature of root causes is one of the various challenges. While migration is increasingly being perceived as a strategy for adaptation to changing environmental and climate patterns, it may also increase conflict risks and lower the adaptive capacity of host countries due to an increase in resource scarcity, socio-political unrest, and by turning climate into a security issue (securitisation). In addition to material factors, discursive settings in which migration and

human mobility are 'securitised', that is made into a security issue, when it should be a human rights issue, have an impact on migration aspirations and migration decision-making.

The uncertainty and complexity of interactions between environmental change, migration, and conflict affect the ability of decision-makers at all scales to shape appropriate and efficient response mechanisms. Nevertheless, the most relevant and effective response mechanisms have been proven to be community-based and location-specific (Rahman et al. 2023). This calls for processes that construct networks of local, national, regional — and potentially global — communities to build rural, coastal, and urban structures that develop sustainable adaptation strategies starting from the realities on the ground.

6.2 Governance of environmental change, migration, and conflict in the Mediterranean

The governance of environmental change and migration needs to be considered against a framework characterised by two broad and overlapping dynamics. On the one hand, migration — and to a lesser extent environmental change — is securitised. On the other hand, environmental change and climate change are presented as threat multipliers and addressed by promoting resilience, which is considered a way to deal with the multiple challenges they pose, including migration and conflict. The result is a limited, fragmented governance structure.

With regard to the process of turning climate into a security issue (securitisation), unmanaged migration tends to be considered problematic in a system of states. Despite the approval of the Global Compact for Safe, Orderly and Regular Migration (UN General Assembly 2018), the recognition of the right to migrate remains problematic and often limited to the right to seek refuge. Migration is presented as a threat to states and people and is therefore securitised. In Europe, the process is a long-term one (Huysmans 2000), which has been reinforced by several migration crises, and by alarming reports about possible future waves of climate and environmental refugees dating back to the 1990s (Myers 1997). The term securitisation refers to a framework originally developed by the Copenhagen School that considers how, and with what consequences, issues are transformed into security issues and governed accordingly (Buzan et al. 1998). The approach emphasises the discursive construction of threats and how labelling an issue as a security issue transforms the way it is governed, prioritised, and lifted over politics, but also contributes to an antagonistic defensive logic that creates enemies and divisions. This is the reason why the security framing, welcomed by some as a way to mobilise action, especially against environmental problems, is considered problematic by many. As part of a process of securitisation, migrants arriving in Europe are presented as threats to states, local identities, and the welfare system, or linked with other threats like terrorism or disease. The characterisation of the threats often remains unspecified, as part of what has been dubbed a 'governmentality of unease' surrounding migration. While the narrative

tends to distinguish (and condemn) traffickers from migrants, often presented as vulnerable victims, the tension remains, and it is particularly evident in the case of climate change. The European Parliament has recognised the link between climate change and migration and proposed a study (Kraler et al. 2020), but the concept of climate refugee has not yet been accepted.

In general, the literature inspired by securitisation warns about the implications of labelling an issue as a security issue, and the implications of using labels like migrants rather than refugees. These approaches suggest that besides material aspects and problems, the ways issues are labelled matter for their governance.

With regard to the discourse on governing environmental change through resilience, the framing of climate change and environmental change more broadly as threat multipliers has a set of implications for governance. On the one hand, it allows scholars and practitioners to consider various ways in which environmental change is linked to security. Threats considered include both direct threats associated, for instance, with more frequent drought, heat waves, and flooding, as well as those determining social instability, migration, and conflict. The causal link between climate change and conflict is still debated and yet, the discursive link supports securitising moves that shape policy responses. On the other hand, the approach adopted to deal with this array of threats has been based on promoting sustainable development and resilience. Threats are often future ones, difficult to frame in terms of probability and risk assessment. It is therefore necessary to become resilient in order to cope with these multiple challenges. The concept of resilience, borrowed from ecology to describe the ability of a system to return to equilibrium and thus survive after a shock, has become a buzzword for dealing with a variety of problems including climate change and migration. The emphasis on resilience is both empowering and limiting. On the one hand, it involves the collaboration of a variety of actors in both developing and developed countries, empowering actors at different levels that go well beyond forms of humanitarian intervention. On the other hand, it transforms those who are not able to embrace sustainable development and become resilient into a threat, either because they can migrate or create instability (Methmann and Oels 2015). These



two dynamics make climate change and migration governance fragmented and not very proactive. On the EU side, Parliament's appeals to fight climate change and elaborate an international framework on climate migration, continue to generate nothing more than reactive and short-term responses (European Parliament 2022). This also makes it challenging to promote urgent measures while avoiding problematic, counterproductive narratives.

Effective governance would require international cooperation and coordination with other regional actors. However, 'the EU favours development interventions that effectively prevent migration, while African partners prefer measures that ease mobility for development' (Hahn and Fessler 2023, p.17; see also Zanker 2019). In February 2022, the African Union (AU) adopted the first continental climate

change and resilient development strategy and action plan (2022–2032). While non-binding, this AU climate strategy aims to develop resource-efficient industry and make key sectors, from agriculture to transport, more climate-resilient, while providing a comprehensive approach. The AU acknowledges the technical and financial support of the EU, among other institutions, to develop its climate strategy. As part of the EU Green Deal and strategy on adaptation to climate change, the EU has committed to 'promote sub-national, national and regional approaches to adaptation, with a specific focus on adaptation in Africa, Small Island Developing States (SIDS), and Least Developed Countries (LDCs)' (European Commission 2021). In this larger political setting, migration remains securitised in the Mediterranean context.

6.3 Legal frameworks and regimes to govern environmental migration

The first IPCC reports referenced millions of potential climate migrants (IPCC 1990). However, most initiatives to improve the protection of people displaced by climate events or environmental degradation have so far failed, primarily due to a lack of political will, which can be explained, at least in part, by the constant securitisation of climate change and its consequences, especially climate-induced migration. The most prominent example of securitisation can be seen in the emergence and impact of the term 'climate refugee' linked to particular narratives including the following ingredients in various forms: a Global North, and often a West European perspective on the Mediterranean South, characterising migration as a security risk, as opposed to other possibilities, such as migration as adaptation, and an assumed correlation between a growing impact of environmental change and rising numbers of refugees despite the absence of empirical evidence in this regard (Klepp 2017; Nash 2019). While the term 'climate refugee' remains not only controversial in its use in political and activist settings, as well as in regard to its analytical value, it also bears no legal value, as displacement due to climate change is not yet part of the Convention relating to the Status of Refugees ('1951 Refugee Convention' or the 'Geneva Convention') (UN 1951). The term is therefore used to discursively highlight the involuntariness of migration in the context of climate change, but without granting any rights or duties to the people thus described. In 2015, Ioane Teitiota from Kiribati, an island nation in the Pacific, formally requested asylum in New Zealand. However, this was rejected by New Zealand's Supreme Court on the grounds that, as a permanent climate migrant, he was not a refugee under the Geneva Convention. While international law still does not sufficiently recognise any environmental or climate-related reasons for displacement that would result in legal protection, in a ruling of January 2020, the UN Human Rights Committee⁷⁶ recognised that



forcibly returning a person to a place where their life would be at risk due to the adverse effects of climate change may violate fundamental human rights, thereby underlining the principle of non-refoulement, and the Kampala Convention⁷⁷ also provides some protection for persons displaced by environmental or climate stressors in Africa (Rolli et al. 2023).

There are several proposals regarding how people affected by the consequences of climate change could be better protected, but their implementation is unlikely in the face of political resistance and legal hurdles (Pérez 2018). In 2015, the Nansen Initiative⁷⁸ adopted an agenda for protecting people who are displaced across national borders due to climate-related disasters. The initiative received strong support, as did its successor, the Platform on Disaster Displacement⁷⁹, but the Agenda for Protection is not legally binding (Nansen Initiative 2015).

A key dimension that is often overlooked in risk-focused approaches, but that needs more conceptual and empirical integration for a better understanding of the environmental change-conflict-migration nexus, is an in-depth analysis of vulnerabilities.

⁷⁶ <https://www.ohchr.org/en/treaty-bodies/ccpr>

⁷⁷ <https://au.int/en/treaties/african-union-convention-protection-and-assistance-internally-displaced-persons-africa>

⁷⁸ <https://environmentalmigration.iom.int/nansen-initiative>

⁷⁹ <https://disasterdisplacement.org/>

6.4 Migration and place-based vulnerabilities

6.4.1 Place-based vulnerabilities are central in the environment-migration-conflict nexus

Vulnerability as an analytical concept relating to climate and environmental change has several different definitions but generally refers to a combination of exposure to a hazard, sensitivity to the hazard, and the adaptive capacity of the affected community, household, or individuals (Smit and Pilifosova 2003; Füssel and Klein 2006; Adger and Jordan 2009). Migration can take place both as an adaptation to climate or environmental change (usually voluntary migration), or as a manifestation of vulnerability (often more forced migration or displacement) (Adger et al. 2018). In vulnerable communities lacking adaptive capacity, migration might not be an option at all, leading to immobility (Adams 2016; Zickgraf 2018). This shows that migration as an adaptation strategy is not accessible to all. Migration has the potential to reduce vulnerability and improve the resilience of migrants and communities (Call et al. 2017; Jha et al. 2018) but in other circumstances has been shown to increase vulnerability (Adger et al. 2018; Linke et al. 2018; Singh and Basu 2020). The literature on the debate about how migration becomes an adaptation strategy or remains a vulnerability issue in relation to existing or non-existing climate adaptation measures is categorised below in *Table 6.2*.

Table 6.2 emphasises the adaptation outcomes existing in different locations. These gaps contribute to migration being viewed as a form of maladaptation and vulnerability, as individuals and communities are forced to migrate due to insufficient adaptation measures in their place of origin. The lack of adequate support and resources for adaptation creates a situation where migration becomes a response to the challenges posed by climate change and other environmental factors. It is worth noting that Morocco stands out as an example. While migration may be a common response to environmental challenges in Morocco, *Table 6.2* highlights that social remittances play a significant role in sustaining those who are left behind. Social remittances refer to non-monetary contributions and support sent back to the home community by emigrants. These contributions can include

knowledge, skills, ideas, and social networks, which can help in coping with the impacts of environmental change and in maintaining or building some level of resilience. However, it is important to note that while social remittances can serve as coping mechanisms, they may not provide a comprehensive solution to the underlying vulnerabilities and adaptation gaps. They often address immediate needs and may not offer long-term strategies for sustainable adaptation. It is therefore crucial to address the root causes of vulnerability, improve adaptation practices, and promote change and migration.

6.4.2 Vulnerability varies across time and space

Exposure to hazards can vary significantly across different parts of a country or region, and it is not constant over time. Factors such as geographical location, urbanisation, and environmental changes can influence the level of exposure to hazards in any given area. The sensitivity to a hazard, which is the degree to which a system is affected by or responsive to a particular hazard, may also change over time. This sensitivity is place-based and determined by the presence of local and national policies, as well as the adaptive capacities of traditional livelihoods, which can include agricultural practices, fishing, and other local economic activities.

Furthermore, adaptive capacities, which refer to the ability of a community or system to adjust to environmental changes, vary across space and time. Different communities and even individual households have varying socio-economic capacities to adapt to environmental change. Factors such as income levels, access to resources, education, and social networks can influence a community's or household's ability to respond effectively to environmental hazards. As McLeman and Hunter (2010) highlight, understanding these variations in adaptive capacity is crucial for developing targeted and effective strategies for building resilience in the face of climate change.

A clear example of how place-based vulnerabilities affect migration in response to environmental change is the case of Syria. A severe drought around 2007–2009, mostly affecting northeastern areas, was followed by the Syrian uprising and subsequent civil war in 2011. Much focus has been put on climate variability, manifested through a

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Table 6.2 | Climate migration in the context of adaptation strategies in the Mediterranean region.

Climatic hazard	Type of adaptation	Mobility type	Adaptation Outcome	References
Droughts and water scarcity	Coping	Transnational mobility	Remittances support those left behind to climate variability. Financial and social remittances provide informal means to adapt without institutional response. Small farmers and women who do not have access to resources and land tenure necessary to cope with climate variability.	Diniega (2023) <i>(Morocco)</i>
Droughts and water scarcity	Coping	Transnational mobility	Migrants may become trapped in their new host country, due to their legal status and their rights, as refugees, including limited mobility in host country.	Dinc and Eklund (2024) <i>(Syria and Türkiye)</i>
Extreme climatic events (flooding, heat waves)	Coping	Displacement	Refugee settlements are often considered temporary solutions, lack of sustainable accommodation and inadequate and insufficient housing for refugees. These spaces are easily exposed to extreme climatic events in the Mediterranean.	Fransen et al. (2024) <i>(Lebanon and Greece)</i>
Drought	Maladaptation	Rural to urban mobility	No adaptation policy in place.	Kelley et al. (2015) <i>(Syria)</i>
Drought	Maladaptation	Rural to urban mobility	Mismanagement of water and land resources, over-reliance on agricultural sector, economic policy changes increasing vulnerability.	de Haas (2006) <i>(Morocco)</i> De Châtel (2014); Feitelson and Tubi (2017); Daoudy (2021); Eklund (2024) <i>(Syria)</i>
Drought	Maladaptation	Rural to urban mobility	Absence of transborder cooperation over shared water resources.	Eklund and Thompson (2017) <i>(Iraq, Syria, and Türkiye)</i> ; Karnieli et al. (2019); Eklund et al. (2022) <i>(Syria)</i>
Heat waves	Maladaptation	Rural to rural mobility (seasonal)	Absence of adaptive policy for agricultural workers and other seasonal workers. Poverty and class inequality in rural areas is exacerbated with increasing health concerns.	Turhan et al. (2015) <i>(Türkiye)</i> Zuccotti et al. (2018) <i>(Tunisia)</i> Dedeoglu (2022) <i>(Türkiye)</i>



severe drought, and its role in triggering widespread migration from farming areas and protests in urban areas (Kelley et al. 2015; Ash and Obradovich 2020). Other research, however, emphasises the role of the Syrian government in creating vulnerability (De Châtel 2014; Eklund and Thompson 2017; Selby et al. 2017; Selby 2019; Daoudy 2020, 2021). For example, long-term mismanagement of water resources and over-reliance on the agricultural sector increased vulnerability to climate stress in Syria (see De Châtel 2014; Feitelson and Tubi 2017; Daoudy 2021). Furthermore, the vulnerability to drought was place-based, as it differed across national borders between Iraq, Syria, and Türkiye, and Eklund et al. (2022) show that the drought response of the agricultural system varied across Syria. Moreover, the removal of subsidies during the drought period increased diesel

prices by 350%, which decreased the ability to cope with the drought, and made crop production in certain areas economically unsustainable (Ababsa 2015; Selby et al. 2017; Dinc and Eklund 2024). Interviews with former Syrian farmers show that most pre-2011 migration and land abandonment actually took place during non-drought years, suggesting that the relationship between drought and migration in Syria was more complex than previously thought (Dinc and Eklund 2024; Eklund et al. 2024).

6.5 Migration, environment, and intersectional aspects

Intersectional structural inequalities that already permeate Mediterranean societies and economies also shape the complex realities of climate vulnerability, migration, and conflict. These inequalities are distributed unevenly across northern and southern Mediterranean countries. The latest IPCC Sixth Assessment Report (2022a) underlines that gender and social inequality are two significant SDG indicators that illustrate the wide gap in intersectional disparities between northern and southern Mediterranean countries. Climate variability reinforces and/or restructures these already unequal relations based on ethnicities, racialised groups, gender identities, age groups, abilities, and class, both within and between communities.

Not all these complex vulnerabilities in the climate-migration-conflict nexus result in coping, but incremental and/or transformative adaptation are also potential pathways. When analysing the influence of climate variability in conjunction with intersectional factors, the prevailing theme in the literature is the prevalence of maladaptation cases. This underscores the importance of intersectional issues and structural inequalities, spanning social and economic realms, in shaping adaptation pathways. It also highlights a policy gap in transformative adaptation within the Mediterranean context.

Intersectional issues and structural inequalities within the context of climate variability influence: (1) the likelihood of mobility and immobility as a consequence of climate change, and (2) the routes and conditions of mobility for different groups based on gender, occupation, and age.

There is scarce literature on intersectional aspects of climate variability in the Mediterranean and its mobility outcomes for specific groups (Sellers 2016). The existing scholarship points to gendered division of labour that permeates the migration experience in several ways. Social inequality exacerbated by climate change is directly linked to income, risk exposure, and weak adaptive capacity of people and groups (Chindarkar 2012; Braham 2018; Diab and Scissa 2023). Based on the existing social disparities and securitised and ambiguous migration contexts outlined in the earlier sections of *Chapter 6*, women, youth, and farmers have weaker adaptive

capacities. However, this does not always result in immobility of these groups. In this sense, the way existing inequalities are addressed is crucial for the development of transformative adaptation practices in the Mediterranean region.

As shown by the literature that looks at rural to urban mobility, women living in rural areas are often observed to be left behind. Also known as the masculinisation of migration, men often migrate first, when livelihoods are impacted by uncertainty, for instance due to a decrease in yields and water availability, and/or to climate-induced disasters (Miletto et al. 2017; Braham 2018; Zuccotti et al. 2018). There are, however, also examples of women migrating in the face of climate change. In a case of climate-induced rural to rural migration in Morocco, women were the ones who migrated (Najjar et al. 2017). Housing opportunities at the destination, and land tenure alongside education, determine migration decision-making and routes for men and women (Najjar et al. 2017; Braham 2018).

There is a general trend of rural to urban migration, also exacerbated by climate-induced water scarcity issues. This pre-existing poverty exacerbates loss of agricultural livelihoods. Farmers without the means to install pumps to cope with water scarcity are the most likely to lose agricultural livelihoods and incomes (de Haas 2006). In many cases, especially for those who cannot afford to hire seasonal workers, the burden on women in the household and in production increases tremendously, exacerbating structural inequalities for women and girls, drawing them into cycles of exploitation and a burdened division of labour (Braham 2018). In this sense, climate variability and social justice are interconnected.

Mobile populations also make up a reserve army of labour for agribusinesses and agricultural sectors in the Mediterranean, working in dire conditions and subjected to climate-induced health and disaster risks (Turhan et al. 2015). These most vulnerable groups are the most invisible in climate adaptation policies (Turhan et al. 2015; Zuccotti et al. 2018). In Türkiye, Syrian refugee children and women increasingly work as agricultural workers in precarious conditions (Dedeoglu 2022).

Recent research further underlines the high vulnerability of refugee populations to extreme climatic events. The vulnerability of refugees in

the Mediterranean region to extreme weather is increasing. Displaced populations frequently end up in locations that are highly susceptible to climate-related incidents, which poses significant challenges for their ability to cope and adjust. A survey carried out by the United Nations High Commissioner for Refugees (UNHCR) revealed that 6% of refugees living in camps encountered natural disasters in 2014. Recent events further underscore the susceptibility of refugees to extreme weather conditions. The harsh winter storms in Lebanon and Jordan during 2019 and 2020 intensified the already precarious living conditions faced by Syrian refugees. These storms brought about low temperatures, heavy rainfall, snowfall, and strong winds, further worsening their situation. Additionally, the vulnerability of refugee camps in Europe became apparent when the Moria camp on Lesbos was devastated by a fire in 2020 (Fransen et al. 2024). Policymakers and governments see refugee settlements as temporary solutions, and they lack sustainable, sufficient, and protective accommodation (Fransen et al. 2024).

Lastly, it is worth noting that intersectional aspects have gained significant attention in the realm of climate finance for adaptation. In particular, the role of remittances has emerged as a crucial topic within this discourse. Scholars and researchers, such as Bendandi and Pauw (2016) and Randazzo et al. (2023), have examined the implications and potential contributions of remittances for and to climate adaptation. In this sense, not only migration, but also short-term mobility, serve as a source of knowledge and finance for those who are immobile in Morocco (Diniega 2023).

In conclusion, the intersectional structural inequalities that permeate Mediterranean societies are fundamental in shaping the complex realities of climate vulnerability, mobility, and conflict. These disparities, exacerbated between northern and southern Mediterranean countries, are reinforced and restructured by climate variability, influencing adaptive capacities and mobility outcomes across different social groups. The literature highlights the prevalence of maladaptive responses, underscoring the need for policies that address these intersectional issues to promote transformative adaptation. Addressing gendered divisions of labour and intersectional inequalities that impact diverse groups of women, youth, farmers, and refugees

is crucial. A comprehensive understanding and integration of these factors into climate adaptation policies and practices will help bridge the existing policy gap and foster more equitable and effective adaptation strategies in the Mediterranean region.



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Information about the authors

Coordinating Lead Authors

Eda ACARA, Istanbul Policy Center, Sabancı University, Türkiye

Jan WILKENS, German Institute for Global and Area Studies (GIGA) & Earth and Society Research Hub (ESRAH), University of Hamburg, Germany

Lead Authors

Mohamed BEHNASSI, Economic, Social and Environmental Council (CESE) / Center for Environment, Human Security, and Governance (CERES), Morocco / The Institute of Mediterranean Studies (CNR-ISMed), Italy

Lina EKLUND, Department of Earth and Environmental Science / Advanced Middle Eastern Studies (CMES), Lund University, Sweden / United Nations University Institute for Water, Environment and Health (UNU-INWEH), Canada

Christiane FRÖHLICH, German Institute for Global and Area Studies (GIGA), Germany

Maria Julia TROMBETTA, School of International Studies, University of Nottingham Ningbo China, P.R. China

