Inclusion of Migration and Migrants in Climate-resilient Development Pathways in the Context of the European Green Deal

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Executive summary

When embarking on the delineated climate-resilient pathways outlined in the New European Green Deal, an omission of migration from strategic planning and from in situ implementation can have serious repercussions. On the one hand, the European Union will be confronted with both an ageing population due to the eminent changes in the demographic structure and will be encountering some serious labour shortages in key sectors of the economy, including the energy sector, health and medical care, construction or engineering and manufacturing. As such, the envisaged twin digital and green transition do also rely on migrant labour from non-European Union nationals, as well as on expertise and knowledge on climate change adaptation and technological advancement. On the other hand, the transition of the European economy (and society) will also impact many of those sectors that are currently relying heavily on migrant labour. In that case, appropriate and well-tailored offers for reskilling and upskilling, enhancing the labour market integration of migrants and the improvement of overall working conditions are crucial to prevent a loss of workforce and prepare for the upcoming occupational transformations. Lastly, and although it is still unclear to what extent the environment per se – and climate change in particular – actually impacts or steers migration movements, it can be stated with certainty that increasing climate change impacts on a global scale will ultimately contribute to alter migration patterns. Whether or not this leads to an intensification of migration flows, the European Union should aim to consider climate change as a potential factor for granting asylum.

Given these migration-related challenges, a process of enhancing the coherence between migration and climate action policy within European Union internal and external policy should be seen as a priority. This report, centring the New European Green Deal, traces the major policy frameworks that constitute the basis for the European agenda of climate-resilient development and identifies whether migration currently is – or should be – represented in these strategies. The report starts by showcasing the objectives of climate-resilient development as outlined by the Intergovernmental Panel on Climate Change (IPCC) and the European Union and then addresses the potential of linking migration with climate resilience. For instance, migration in the light of climate change plays a major role in both the current academic debate as well as in the guiding frameworks of major global organizations such as IOM or the Office of the United Nations High Commissioner for Refugees (UNHCR). In addition, migration comes to the fore in the Sustainable Development Goals (SDGs) through Objective 10.7, and thus indeed represents a core pillar that needs to be recognized for climate-resilient development as a whole. However, and albeit there is ample potential and need to do so, migration is barely present in the New European Green Deal. This report argues that such framework could acknowledge and increasingly merge the agendas laid out in the New European Green Deal and other policy frameworks that include migration to a greater extent, such as the New Pact on Migration and Asylum, the European Skills Agenda with the current focus on the European Year of Skills 2023 or the Skills and Talent Package as a deliverable of the New Pact on Migration and Asylum.

This report is intended as a guiding framework and work of reference for practitioners, private sector stakeholders, academic and policy experts, and members of key organizations and highlights the current representation of migration in European (climate and migration) policy. The report shall thus equip with the skills, tools and know-how to advance thematic and policy-oriented work on migration, the environment and climate change altogether, thereby paving the way to create the best possible conditions

for achieving climate resilience in a just, equitable and sustainable manner. Given that migration and climate-resilient development pathways have been crafted rather separately so far, this report offers the following recommendations:

- Climate-resilient development, as well as issues arising with the green transition, should be firmly anchored in the design and the implementation of (labour) mobility schemes, as well as in measures aimed at reskilling and upskilling migrant workers to be prepared for the shifts in occupations in the light of climate change.
- The other way around, migration-related considerations have to be integrated into the major frameworks for achieving climate-resilient development, for instance regarding legally anchored protection mechanisms for those affected by environmental change and considering the possibility to draw from talents and skills that possess the tools and the knowledge to assist in climate-resilient development.
- Developing, strengthening and harmonizing talent recognition frameworks between the European Union and third-country partners can lift the pressure from the European labour market and can entail lasting and sustainable partnerships, for instance by embedding mechanisms to facilitate the assessment and recognition of skills and qualifications in Talent Partnerships.
- The European Union and its member States should revise and extend their Labour Market Information Systems (LMIS) in order to continuously monitor and analyse potential labour and skill shortages, and link the identification of skills shortages with reskilling and upskilling measures, or investment in skills development in partner countries to ensure that skills-based mobility contributes to sustainable development for all parties.
- Investment in vocational education and training (VET), and general education with a clear focus on climate-resilient development can help non-European Union nationals with a swifter integration process and establishes a broader base for wide-ranging and participative societal engagement.

Cooperation and trust between different stakeholders in diverse areas (private sector, public sector, government, academia, social partners, international and local organizations) and across all scale levels (local, national, European Union-wide, global) is key to achieving both the envisaged objectives for climate-resilient development while also integrating arising challenges of migration.

1. Introduction

The linkages between migration and environmental change, climate change and hazards have become key elements in several global policy frameworks and processes in recent years. These frameworks and processes include, for instance the following: United Nations Framework Convention on Climate Change (UNFCCC) (United Nations, 1992); Sendai Framework for Disaster Risk Reduction (United Nations, 2015a); SDGs (United Nations Department of Economic and Social Affairs, n.d.; Katramiz and Okitasari, 2021); and the Global Compact for Safe, Orderly and Regular Migration (United Nations, 2018). These policy frameworks were preceded by intensive debates in research and public discourses on the potentially devastating effects of global warming on migration and forced displacement. Accordingly, the policy discourse has long been shaped by how (forced) migration can be averted, minimized and addressed in the context of climate and environmental change or by which legal and political measures those affected could be given better protection.

In the academic debate over the past ten years, however, the question of whether and how migration can also be an adaptation strategy to the adverse effects of climate change has become increasingly important. After all, the assessment of migration processes and their interactions with socioeconomic development has changed since the 1990s: whereas previously negative aspects such as the brain drain were often emphasized, both science and the policy sphere now tend to emphasize the enormous potential of remittances or the immigration of skilled labour forces (Cattaneo et al., 2019). Nevertheless, the conceptualization of the migration–development nexus, comparable to a "pendulum" (de Haas, 2012:10), has swung between positive and negative assessments of migration as catalyst of development for the time being. Consequently, scholars argue for the relevancy of contextual factors that render migration a positive or negative contributor to development, with the possibility to achieve a "win-win process" (Portes, 2009:19) if both origin and destination governments collaborate to create well-tailored labour-migration schemes (de Haas, 2012; Castles, 2009; Portes, 2009). As the gloomy forecasts concerning the impacts of climate change on socioecological systems and human security have given impetus to initiate decarbonized and sustainable development pathways decoupled from exploiting natural capital, it is, therefore, necessary to systematically assess in how far migration can contribute to climate-resilient development pathways and if so, how migration can be (better) integrated into key policies and programmes aiming at establishing climate resilience at regional and national levels.

As defined by the IPCC's Sixth Assessment Report (AR6), climate-resilient development integrates climate change adaptation measures and their enabling conditions with climate change mitigation to advance sustainable development for all (Schipper et al., 2022). Climate-resilient development involves questions on the following: (a) equity and system transitions in ecosystems; (b) urban infrastructure; (c) energy; (d) industry; and (e) society; and includes adaptations for human, ecosystem and planetary health. Pursuing climate-resilient development focuses on both where people and ecosystems are co-located, as well as the protection and maintenance of ecosystem function at the planetary scale. Pathways for advancing climate-resilient development are development trajectories that successfully integrate mitigation and adaptation actions to advance sustainable development (ibid.). Climate-resilient development pathways may be temporarily coincident with any Representative Concentration Pathway[1],

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[1] Representative Concentration Pathways (RCPs) are different greenhouse gas concentration trajectories adopted by the IPCC. These pathways describe different climate change developments depending on the volume of greenhouse gas emissions in the years to come (IPCC, 2022:6).

and Shared Socioeconomic Pathway[2] scenario used throughout IPCC's AR6, but do not follow any particular scenario in all places and in overall time.

In 2020, the European Union approved the European Green Deal, which is an integral part of the European Commission's strategy to implement the Paris Agreement on Climate Change. The European Green Deal consists of a set of eight different strategic policy areas: (a) clean energy; (b) sustainable industry; (c) building and renovation; (d) farm to fork; (e) eliminating pollution; (f) sustainable mobility; (g) biodiversity; and (h) sustainable finance. The overarching goal of the European Green Deal is to make the European Union climate neutral by 2050. This objective is tied to the recognition that the green transition as a sustainable growth strategy will not only require the necessary green skills, but that it would also lead to transformations and losses of jobs in sectors relying heavily on fossil fuels. Other sectors, such as agriculture, renewable energy, environmental goods and services, manufacturing, extractive industries, as well as construction and building services, might experience the creation of new jobs.

Given that at least some of these sectors also tend to rely heavily on migrant workers – from other European Union countries, from Eastern Partnership countries and from other third countries – the sectoral transformations that would be triggered by the roll-out of the European Green Deal will have manifold and complex implications for migration-dependent economic sectors. With skills gaps and labour shortages having also been identified as challenges across most of the European Union member States (Rutkowski, 2007; Brucker Juricic et al., 2021; Poór et al., 2021), the potential of migration in facilitating skills transfers and development, as well as promoting inclusive growth and greater sustainability has been emphasized by the Global Skills Partnership, the European Union Skills and Talent Package and the European Skills Agenda. An important question is also how to include migrant groups already living in the European Union in the green transition, such as how to make sure that these groups benefit from reskilling or upskilling opportunities and how potentially arising cultural, linguistic and socioeconomic barriers can be addressed accordingly in this process to make the most of migrants' skills, while ensuring their participation and inclusion in European Union societies. Furthermore, measures of social protection need to be planned and implemented for those who cannot be reskilled, and focus needs to be placed on appropriate measures that deal with potentially arising risks from transforming employment environments, such as increasingly flexible – and in some instances precarious – modalities of work.

While the European Union Skills and Talent Package recognizes the importance of migration to support the digital and twin transitions, migration does not feature prominently in the European Green Deal so far. The European Skills Agenda, for instance, acknowledges the transformations that the twin green and digital transitions will have across different sectors and work (European Commission, 2020a). It thus advocates the need for joint action from the different stakeholders to promote skills development and tap talent from abroad in enhancing the green transitions and in filling the jobs that will be created. On the other hand, the European Green Deal seeks to use green diplomacy, influence, trade and development policy, and financial resources to get its partners to join this path to sustainability and prosperity for all. Despite the recognition and commitment, it is still unclear, or not explicit, how far labour migration could be leveraged to support the European Green Deal, climate resilience and promote inclusive growth.

Based on the foregoing background, this study seeks to examine how and whether migration is anchored and represented within some of the key policy areas of the European Green Deal, namely clean energy, the new Industrial Strategy, building and renovation, farm to fork, and the EU Strategy on Adaptation to Climate Change. With both migration and climate change adaptation and mitigation as two of the central

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2   Shared Socioeconomic Pathways (SSPs) are five different scenarios of socioeconomic changes at a global level up to the year 2100. These scenarios are the basis to derive greenhouse gas emissions scenarios with different climate policies. (ibid.)

challenges in the near future, and two of the cornerstones of European Union internal and external policy, a closer look at potential synergies and overlaps in the context of the European Green Deal is certainly warranted. Moreover, an increased consideration and subsequent integration of migration – for instance as important component of climate change adaptation or as catalyst for sustainable and lasting labour mobility schemes as part of climate-resilient development pathways – bears ample potential to enhance and refine the current scope of the European Green Deal.

Therefore, this study shall serve as a knowledge base for equipping governments, practitioners and experts in the field of migration and climate change with the skills, tools and know-how to advance thematic and policy-oriented work on migration, the environment, and climate change altogether, thus paving the way to create the best possible conditions for achieving climate resilience in a just, equitable and sustainable manner. Taking migration as an important social mechanism – and a key aspect of climate change adaptation and mitigation – into account for the major objectives of the European Green Deal can thus ensure a more successful and lasting implementation of climate-resilient development pathways in the European Union and beyond. The remainder of the paper is proceeding with the main foundations for climate-resilient development as outlined by the IPCC in chapter 1 and continues with some considerations on the linkages between migration, climate change and resilience in chapter 2. Chapter 3 specifically focuses on the key elements of the European Green Deal and potential implications for existing migration patterns, while chapter 4 highlights potential entry points where migration could be integrated with more emphasis in existing European Union policies.

2. Climate-resilient development: What is it supposed to mean?

A recent and comprehensive definition of climate-resilient development was provided in chapter 18 of the IPCC's latest Sixth Assessment Report (Schipper et al., 2022:2660–2661)[3] on climate change impacts, adaptation and vulnerability: Climate-resilient development assumes a crucial role next to "observed and projected climate change impacts" and "adaptation measures and enabling conditions", signifying the relevance of merging the different strings into future-oriented and progressive scenarios for sustainable development. Climate-resilient development thereby aims at integrating adaptation measures and their respective enabling conditions with mitigation practices in a way that incorporates the co-dependence of people and ecosystems on local scale levels while simultaneously advancing ecosystem functions at a planetary scale. The IPCC thus stresses the importance of including questions of equity and emphasizes the need for various system transitions in ecosystems, urban infrastructure, energy, industry and society. Most importantly, the report stresses the inextricable interdependency of human, ecosystem and planetary health and argues that action must be taken on many levels at once to succeed (Schipper et al., 2022). For this reason, the IPCC introduces the notion of climate-resilient development pathways, which are concrete development trajectories for action that fruitfully merge the mitigation and adaptation practices to achieve sustainable and equitable development for all (ibid.). Examples of climate-resilient developments include, among others, the fostering of vertical farms in urban areas, low-impact development infrastructure for clean drinking water, flood control, or the fostering of urban ecosystems (Venema, 2017).

To envision these pathways, the IPCC firstly delineates the underlying conditions for climate-resilient development, comprising the current frame for further action (IPCC, 2022). The IPCC report thereby draws upon observed impacts, projected future risks, adaptation limits and trends of vulnerability and subsequently derives – and stresses – the need for urgent action. The report emphasizes the notion of a "rapidly closing window of opportunity" that can enable climate-resilient development when pursuing correlating pathways in a concise, coordinated and integrative manner (IPCC, 2022:29). Current pathway scenarios are, however, heavily restricted by the ongoing global warming, especially when exceeding the 1.5°C mark, persisting social and economic inequalities, the different needs and capacities at national, regional and local scales or the unfavourable long-term effects of past development choices. Crucially, the report underlines that the capacities and abilities to follow climate-resilient development pathways are unequally distributed on a global level, particularly because climate change itself contributes to widening economic and social inequalities and heightens vulnerability levels of those most affected (IPCC, 2022:33). As geographic locations of notable interest, the report highlights coastal areas, mountains, deserts, small islands and polar regions – with the consequence that is critical to embrace and support comprehensive, integrative and innovative responses that harness synergies and trade-offs – with the subsequent potential to enable adaptation and mitigation at various ends simultaneously. Societal choices resulting from open cooperation between government bodies, the private sector and civil society actors still have the potential to embark on climate-resilient futures (IPCC, 2022:31). For instance, increasingly resorting to practices of agroforestry, farm and landscape diversification or community-based adaptation, supported by effective

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3   Please note that the whole chapter refers to this report.

public policies and institutional support that mirrors above-mentioned cooperation, can significantly contribute to enhance food security and nutrition (IPCC, 2022:21). As another example, effective and sustainable partnerships between civil actors, governments and private sector stakeholders can entail collaborative and target-oriented approaches towards urban transitions, inter alia including societal choices regarding the preferred designs of an urban future, the implementation of social protection mechanisms, and open participation in the set-up of appropriate physical infrastructure (IPCC, 2022:24).

According to the IPCC, the basis for successful and effective climate-resilient development pathways can be anchored in inclusive and international cooperation at all levels, most notably including the affected communities themselves (IPCC, 2022:29). Governments hence have the responsibility to comprehensively include civil society stakeholders, educational bodies, scientific and other institutions, the media landscape, investors and businesses and those communities that are most affected by and most vulnerable to climate change (ibid.). The IPCC thereby emphasizes the notion of inclusive governance, which contributes to more effective and long-lasting solutions vis-à-vis climate change impacts. It is also highlighted that societies themselves need to undertake continuous choices within established areas of engagement that successfully link the various scale levels of action, like those shown in the previous examples. Such emerging partnerships between civil society actors, governments and private sector stakeholders are said to be most effective and beneficial when backed by support from relevant institutions and provided with appropriate resources. This specifically concerns the necessary financial means, sound political leadership and climate services that include easily accessible information and decision support tools (ibid.). To enable climate-resilient development, the report moreover stresses the need to resort to various forms of knowledge, thereby including other world views, values and innovative ideas to guarantee courses of action that are based on principles of equity. Merging and reconciling the different interests thus would have to include an acknowledgement of scientific, indigenous, practitioner, local and other forms of knowledge and address issues of ethnicity, race, class, gender, disability, location and income. Eventually, rights-based approaches based on participation and capacity-building are projected to cater for the most fruitful and constructive changes (ibid.).

When evaluating the potential for climate-resilient development, the latest IPCC report also addresses the need to conjointly tackle the health, functioning and maintenance of both human and natural systems. Regarding the latter aspect, the protection of the Earth's biodiversity is seen as a great challenge that bears the potential to significantly improve the chances of achieving adaptation and mitigation objectives. Natural systems imply benefits for human well-being and health, as they can provide valuable resources, such as wood, fibre, food and water. Moreover, the health and integrity of natural systems should also directly benefit climate-resilient development by contributing to enhanced disaster risk reduction and limiting self-reinforcing cycles of emitting greenhouse gases and degradation (IPCC, 2022:32). Human systems, on the other hand, likewise demand urgent action for the newly built environment and adapting existing urban designs, land-use patterns and infrastructure. Rapidly progressing urbanization bears a lot of potential to address and enhance climate resilience according to the IPCC report, whereby improvements can range from rural areas and informal settlements up to highly metropolitan areas and particularly must focus on areas that are most vulnerable such as coastal cities. Particularly, the presence of market-led and energy-intensive urban design, the dominance of grey infrastructure and an absence of integration of human and natural systems need to be reviewed and aligned with climate-resilient development pathways. Also, in this case, integrative governance is presented as the key (IPCC, 2022:31–32).

Lastly, the IPCC stresses that achieving climate-resilient development is an undertaking of exceptional difficulty that requires everybody to act in concert (IPCC, 2022:33). A major challenge is that climate change has already significantly disrupted human and natural systems. The prospects of achieving climate-resilient development will be considerably limited when the 1.5°C mark is reached. Moreover, past development

choices, current emission pathways and the fact that the most vulnerable areas find themselves caught in cycles of increasing vulnerability exacerbated by climate change render swift, coordinated, cooperative and integrative action indispensable. However, with the available human resources, adequate financing, advancing technologies, available information and resorting to diverse forms of knowledge, as well as fostering integrative means of governance, the IPCC report stresses the potential to embark on climate-resilient development that incorporates benefits for all. Finally, the report suggests embracing the rapidly closing window of opportunity to secure a sustainable future with timely action (ibid.).

3. Migration, climate change and resilience – How to connect the dots?

3.1. Migration and sustainable development

Although rather indirect, an important connection between migration and climate-resilient development can already be found in the SDGs of the 2030 Agenda for Sustainable Development (United Nations, 2015b), which unlike the Millennium Development Goals, have incorporated migration and mobile populations (McGregor, 2020), namely through Objective 10.7.

In the SDGs, migration is officially recognized as an important driver for inclusive growth and sustainable development, thus explicitly highlighting the positive potential of migration to foster change. The role of migration is contextualized as being embedded in the three main dimensions of sustainable development, namely economic, social and environmental. Thus, the close correlation between climate-resilient pathways and migration comes to the fore. However, a distinct linkage between environmental change and migration is largely missing in the outline of the SDGs. Nevertheless, there are a couple of entry points that could ignite further discussion concerning an adequate representation and integration of migration in the context of climate change into the overarching framework. For instance, the SDGs are largely basing their efforts upon a revitalized Global Partnership for Sustainable Development (United Nations, 2015b:10), thereby implying the need to bring together various stakeholders on all levels in an effort of solidarity. Solidarity is also critical for achieving climate-resilient pathways, as well as regarding the creation of a comprehensive approach towards migration, hence bearing a lot of potential for an increased merging of those two segments. Additionally, the SDGs also highlight the need for strengthening the capabilities and the resilience of vulnerable communities, regarding both environmental change and migration. In Goal 1 ("Eradicate poverty and all its forms"), for instance, a direct linkage between enhancing vulnerable communities' prospects and introducing climate-resilient pathways is made. One possible avenue to connect the dots is furthermore offered by SDG 4 ("Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"), where an augmentation of potential scholarships and exchange relations are proposed (United Nations, 2015b).

In light of unequally distributed climate change impacts, such proposals rely on the role of migration as a connector and facilitator (Piper, 2017). Further linkages between the SDGs and migration certainly emerge in Goal 8 ("Decent work and economic growth"), where economic diversification, technological upgrading and innovation shall lead to increasing economic prosperity with a specific focus on value-added and labour-intensive sectors. The SDGs thereby specifically mention the importance of strengthening migrant workers' rights and catering for equitable and just conditions of employment. Overall, the objective of prosperous economic growth per se requires an integration of migration and the socioeconomic implications it entails, into the set-up of the SDGs. This, of course, is closely related to Goal 10 ("Reduced inequalities"), which particularly highlights the importance of cross-country cooperation on reducing inequalities, enabling equal opportunities and ensuring adequate representation

of all countries, but especially so for developing countries. In that regard, the SDGs specifically state to "facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies" (United Nations, 2015b:21), indicating the fundamental role of migration in the process. Additionally, the crucial role of remittances is mentioned by attempting to reduce the transaction costs of remittances by 2030. With climate change projected to widen inequalities worldwide, such intentions could enable conducive migration environments and showcase the potential of aligning issues arising in the wake of climate change with policies targeting migration. The SDGs also underline the need to resort to effective measures and actions in the light of humanitarian emergencies and crises, thereby particularly highlighting migrants, and refugees as vulnerable groups (United Nations, 2015b). When designing strategies to adequately tackle emerging climate change impacts in affected countries, migration is supposed to have an important role in the process. Moreover, one of the key features of the SDGs is the emphasis on unity and integrity displayed on a global level while simultaneously recognizing differential capacities and honouring national sovereignty. Both the National Adaptation Programmes of Action and National Adaptation Plans are designated to tackle climate change issues, as well as national migration strategies, and an increasing recognition of migration in the various National Adaptation Plans is a first step in the right direction (see also Piper, 2017).

A direct connection between sustainable development and migration is made in the Global Compact for Migration (United Nations, 2018). In its Objective 2 ("Minimize the adverse drivers and structural factors that compel people to leave their country of origin"), signatory States commit to ensure timely and full implementation of the 2030 Agenda for Sustainable Development, as well as build upon and invest in the implementation of other existing frameworks, in order to enhance the overall impact of the Global Compact to facilitate safe, orderly and regular migration.

3.2. The academic debate on the interlinkages between climate change and migration

The increased probability and increasing intensity of sudden-onset hazards, such as floods or storms, are one of the most visible consequences of climate change. The safety of millions of people is threatened as a result. In addition, slow-onset hazards, such as changing precipitation patterns, droughts or coastal erosion, associated with global warming are increasingly affecting food security and (traditional) livelihoods. Fed by public fears in the Global North that climate change might soon create millions of "climate refugees" in the Global South who would desperately be trying to reach Europe or North America (Nash, 2019; Schraven, 2021), the question of how those adverse effects of global warming might lead to various forms of migration and their related effects have been focal in the academic debate on the interlinkages between migration and climate change. The last two decades of academic research have certainly led to a consensus in the scientific community that migration remains highly complex even in the face of such significant changes, particularly because climate change impacts are not the only factors contributing to shape migration patterns. Rather, other factors also play a role: economic circumstances (such as labour market situation); political drivers (such as visa exemption, repression, conflicts, political will and capacities to address the adverse impacts of climate change); social conditions (such as access to networks that support the mobility process); demographic structures (such as household sizes); and individual characteristics (such as level of education), as well as a range of further intervening opportunities and obstacles can play a role in the decision whether someone leaves their place of residence (Cattaneo et al., 2019; Hoffmann et al., 2020).

The IPCC underlines the difficulty of establishing a causal connection between the consequences of climate change and migration (Allen et al., 2018). Even if ecological factors can have a triggering effect on migration, they are usually strongly interwoven with other factors. Furthermore, the urgency of

establishing suitable terminology to describe the migration and climate change interlinkages is often emphasized. The complexity of migration decisions and the associated difficulty in establishing generally accepted definitions makes it practically impossible to give an accurate estimate of the number of people who migrate or will migrate due to climate change (McAdam, 2012). Nevertheless, figures, data and forecasts on the subject of climate migration are still a fundamental element of the public, political and media debate on the subject.

Research on the migration, environment and climate change nexus has also pointed to the fact that (forced) immobility (such as due to depleted resources of a household) is a potential consequence of the adverse effects of climate change that might affect vulnerable population groups even more severely than displacement or migration. Although there is no agreed definition for the term, "trapped populations" is partly used in academia and the policy sphere to describe vulnerable population groups, which lack – or have lost – the necessary resources to move (Ayeb-Karlsson et al., 2018).

On the other hand, in the past ten years, there has been a trend in the academic debate that increasingly urges researchers to analyse when and under which circumstances migration might also be a form of adaptation to deal with the consequences of climate change. Vinke et al. (2020) argue that the (academic) discourse on climate change and migration has shifted from predominantly labelling migration as direct effect of climate change impacts to portraying migration as form of human adaptation. The potential of "migration as adaptation" (Schraven et al., 2021) is often based on the possibility of increasing households' opportunities to generate additional income, receive financial and other remittances, or diversify their livelihood strategies when opting for migration (Ober and Sakdapolrak, 2017). Furthermore, planned relocation, pastoralism and seasonal strategies of mobility might, under certain circumstance, have positive impulses for adaptation as well (Cissé al., 2022). However, a simplistic and generalized equation of migration as adaptation is highly inappropriate since the effects of migration are multi-layered and highly context specific. A more intensified academic, political and societal debate is certainly needed in that regard. Furthermore, the debate on "migration as adaptation" is still largely focusing on the adaptive effects of migration on the microlevel. With a few exceptions (such as Draper, 2021), a systematic debate on whether or how migration can be utilized for achieving higher levels of climate resilience or climate change adaptation is largely lacking so far (Schraven et al., 2021; Oakes et al., 2020).

3.3. How are the interlinkages addressed politically? The examples of IOM, Office of the United Nations High Commissioner for Refugees and the European Commission

In the global setting, IOM and UNHCR have been dealing with issues of migration in the context of environmental change since the 1990s. Recently, both organizations have formulated strategic documents on how to deal with the migration and climate change nexus.

Based on recent advancements in the areas of research, policymaking and practice, IOM (2020) proposed the novel *Institutional Strategy on Migration, Environment and Climate Change, 2021–2030*, which constitutes the new guiding framework and major directive for IOM research, counsel and action. Initiated in 2020, this new strategy reacts to the rising attention towards shifting patterns of migration in the light of climate and environmental change on the one hand, while aligning with major contemporary frameworks, such as the 2030 Agenda for Sustainable Development, the UNFCCC, the Paris Agreement, the Nansen Agenda for the Protection of Cross-Border Displaced Persons, the Global Compact for Migration and the Sendai Framework for Disaster Risk Reduction, on the other hand. The strategy is based on the latest scientific knowledge and advocates for a comprehensive, evidence- and rights-based approach towards migration in the context of environmental change, thereby including migrants, refugees and displaced persons

alike. The strategy is particularly designed to better coordinate between the respective overarching frameworks, the diverse range of institutional partners, and the responsible governments and policy stakeholders across scales. The strategy formulates three main objectives that are developing solutions for the following: (a) "people to move", which refer to managing migration in the context of climate change, environmental degradation and disasters; (b) "people on the move", which refer to assisting and protecting migrants and displaced persons in the context of climate change, environmental degradation and disasters due to natural hazards; and (c) "people to stay", which refer to making migration a choice by building resilience and addressing the adverse climatic and environmental drivers that compel people to move. Furthermore, four priority areas of engagement are defined: first, IOM declares that it will support States and other players to develop innovative, rights-based migration policies and practices that integrate issues of climate change, environmental degradation and disasters due to natural hazards. IOM is also planning to (further) strengthen evidence-based policy and operational approaches to address migration in the context of climate change, environmental degradation and disasters due to natural hazards, through the production, analysis and dissemination of relevant data and knowledge. Furthermore, States and other players shall be supported to operationalize responses to migration and displacement in the context of environmental degradation, climate change and disasters across the humanitarian development peace nexus. Importantly, IOM also plans to (further) promote policy coherence and inclusive partnerships to mainstream the inclusion of migration and displacement in other relevant policy agendas (such as climate change, environment and disasters) (IOM, 2020).

The Strategic Framework for Climate Action by UNHCR (2021) presents a guiding framework oriented towards managing the increasingly relevant issue of migration related to environmental and climate change. The framework thus depicts the respective pathways for UNHCR action on the ground and is strongly based on close collaboration and cooperation with affected communities, governments, United Nations country teams and a wide range of other partners. Moreover, and in line with other recent documents addressing the migration and environmental change nexus, the novel framework also aligns itself with existing overarching strategies, guiding principles and conventions to strive for an increasing harmonization of approaches into a comprehensive global strategy. Hence, the Framework acknowledges the importance of incorporating the 2030 Agenda for Sustainable Development, the UNFCCC, the Paris Agreement and many other frameworks on global, national, regional and local levels. UNHCR defines three major pillars for further action: first, the pillar "law and policy" focuses on assisting governments, relevant institutions and the respective stakeholders in developing, planning and implementing legal and policy frameworks that are specifically targeting the protection of and assistance for migrants, refugees and displaced persons affected by climate change. Secondly, the pillar "operations" addresses concrete action on the ground, whereby the preservation and rehabilitation of climate change-prone areas, the enhancement of vulnerable and displaced communities' resilience and the augmented preparation, anticipation and response vis-à-vis environmental disasters are in the focus of interest. Lastly, the pillar "UNHCR's global footprint" outlines opportunities for the UNHCR to contribute to sustainable development by reducing greenhouse gas emissions and minimizing negative impacts on the environment in the context of UNHCR's on-the-ground action. All the pillars and their respective subdivisions are underscored by a range of potential future actions that the framework intends to set in motion. The Framework furthermore emphasizes UNHCR's objectives of implementing an approach that is collaborative, evidence-based, innovative and inclusive to specifically cater for the needs of the most vulnerable refugee, displacement and migrant communities in the light of climate change (ibid.).

In its recently published Commission staff working document "Addressing displacement and migration related to disasters, climate change and environmental degradation" – an update of a document published in 2013 – the European Commission provides "an overview and assessment of existing European Union policies, instruments and practices addressing displacement and migration of populations caused

by disasters" (European Commission, 2022a:4). The paper emphasizes that by holding the current chairpersonship of the Platform for Disaster Displacement, the Commission intends to raise the issue of disaster and climate-related displacement on the international agenda and aims to strengthen and mobilize coordinated global efforts for more evidence-based, policy-driven and adequately resourced actions in this area (European Commission 2022a:20–21). The Commission intends to focus on the following: (European Commission, n.d.a):

(a) Addressing the longer-term developmental challenges that displacement and migration induced by disasters, climate change and environmental degradation pose, in line with the humanitarian–development–peace nexus;

(b) Better linking humanitarian action, development cooperation and environmental policy in order to strengthen resilience, disaster risk reduction and climate change adaptation;

(c) Promoting durable solutions to disaster and climate-related displacement;

(d) Continuing promotion of research, data collection and analysis, as well as the exchange of knowledge on disaster and climate-related displacement;

(e) Further strengthening support to disaster preparedness and anticipatory action in order to avert and minimize disaster and climate-related displacement;

(f) Continuing capacity-building in favour of partner countries to ensure that European Union and international tools have the highest impact to better respond before, during and after displacement and migration;

(g) Promoting good governance and renewing efforts to further involve local communities in partner countries, above all, youth as agents of change and women as a heavily affected group;

(h) Further protecting persons displaced or trapped by disasters, the adverse effects of climate change and environmental degradation and properly addressing needs to ensure that no one is left behind in response and recovery programmes, and that governments take leadership in ensuring access to protection services;

(i) Ensuring policy and programming coherence at all levels on issues of disaster and climate-related displacement;

(j) Continuing to promote a Team Europe approach to disaster and climate and environmental-related displacement and migration, which could be achieved through additional Team Europe initiatives, if needed, and regular engagement and dialogue with member States in this area;

(k) At the global level, continuing to strengthen multilateralism and promoting an approach based on partnerships, including through synergies and coordination with relevant international organizations, processes and policy frameworks.

The European Commission's document describes concrete political steps and declarations of intent, in contrast to central documents from IOM and UNHCR that do not outline the strategic orientation concerning how the European Commission or the European Union as a whole will address the various challenges of migration in the context of climate change, considering both the external and internal dimensions of its policy and practice.

4. The European Green Deal: What is it about and what could it mean for migration?

4.1. Key elements of the European Green Deal

In the following section, major elements of the European Green Deal, which are of particular relevance for the scope of this report, will be briefly introduced.

The farm to fork approach of the European Union is one of the cornerstones of the New European Green Deal and represents one of the first subdomains with an associated strategy, outlining the objectives and scopes for concrete action. The farm to fork strategy aims at bringing several major goals of the European Green Deal together, including increased resilience vis-à-vis environmental change and other crises, an economic transition, health and well-being within societies, and just and equitable participation in global food systems. The strategy thus also aligns well with the SDGs, reacts to the economic downturn in the wake of the COVID-19 pandemic, and answers the call for a European Union-wide robust and resilient food system. From farm to fork thereby implies the multitude of different levels to be included in this transition, starting with sustainable, organic and fair production standards on the farm up to modernized transportation, processing and retailing mechanisms.

The farm to fork strategy addresses multiple objectives at once: first, a switch to nutritious, organic and healthy food should benefit the health and well-being of European societies and in the best-case scenario, ignite lifestyle and consumption changes. This aligns well with the need for conscious societal choices that were mentioned when discussing the climate-resilient development pathways of the IPCC outlined in chapter 1. One major avenue to this effect is a renewed and comprehensive labelling scheme that addresses nutritional, environmental and social aspects of food products. Additionally, this will also help to reduce health-care costs in the long term. Secondly, a sustainable mode of production also aspires to significantly contribute to a reduction of greenhouse gas emissions and pollution, given that food production, transport, processing and retail exhibit a comparably high ecological footprint. In this vein, the new approach aims to reduce chemical and more hazardous pesticides by 50 per cent until 2030, intends to minimize nutrient losses by at least 50 per cent, and proposes to specifically advocate for and support organic modes of farming (European Commission, n.d.b). As a result, climate change mitigation and biodiversity conservation objectives shall be met by the farm to fork strategy as well, steering the European Union towards climate neutrality by 2050. Third, the transition to sustainable food practices is also advocated as an enormous economic opportunity, whereby the European Union aspires to render sustainability as a trademark of European food production and thus strengthen circular economies within and increase competitiveness outside of the European Union. Lastly, the desired shift in food production and consumption patterns also aspires to raise standards globally by acting as a best practice example and extending external cooperation. The farm to fork strategy thus tackles several major development issues at once and intends to steer European societies towards acknowledging resilient, sustainable and

equitable food systems. Interestingly, although the farm to fork strategy recognizes the rights of seasonal workers in the food system, it does not explicitly refer to migrants (European Commission, 2019, 2020b, 2020c and n.d.b).

The new Industrial Strategy is paving the way for a shift towards sustainable industries that combine the twin transitions of climate neutrality and digital leadership. This approach is aiming at a significant reduction of the European Union's carbon footprint by fostering clean and affordable technology solutions and offering new models for businesses, all the while enhancing competitiveness on a global level. The major impetus is the achievement of sustainable and green industries as a trademark of the European economy, thus guaranteeing quality products, intra-European market prosperity and customer satisfaction. To achieve this outcome, the European Union increasingly intends to decouple the use of resources from economic growth by implementing a cross-sectoral approach and enhancing the role of circular economies.

Three major cornerstones of the new Industrial Strategy comprise the following: (a) provision of an industry that assists the green transition towards climate neutrality by 2050 (for instance, through reducing waste and improving product durability); (b) achievement of global competitiveness while building the European economy on a circular model that is self-sustaining and reduces dependencies; and (c) increasing involvement of digital technologies as a way to upskill employees and support the decarbonization of the industry. To this end, the European Union has already embarked on the Circular Economy Action Plan and also probes new ways of cooperating with stakeholders, for instance by launching the Clean Hydrogen Alliance. Such alliances shall be followed by similar cooperative efforts in other sectors. Moreover, the new Industrial Strategy highly values and supports existing and aspiring small and medium enterprises (SMEs) as the backbone of the European economy. These SMEs thus capture a major role in the transition towards a regenerative growth model as the basis for sustainable industries, thereby keeping resource utilization in check and respecting the planetary boundaries. Importantly, the strategy is emphasizing a global and collaborative effort, recognizing that Europe cannot achieve transformative change by itself. Although a collaborative effort beyond the immediate border of the European Union is mentioned, and thereby implicitly also refers to the need for labour migration in diverse sectors to bolster the overall economic capacities and in order to countersteer apparent labour shortages, migration is not mentioned explicitly. With the new Industrial Strategy, however, the European Union desires to set a good example in the quest to achieve the SDGs by 2030 (European Commission, 2019, 2020d, 2020e and n.d.c).

As the European Union is raising its climate targets for 2030 and achieving to become climate neutral by 2050, the availability of clean, green and renewable energy will represent one of the core pillars to successfully achieve the underlying objectives of the European Green Deal. Given that 75 per cent of greenhouse gas emissions of the European Union fall upon the production and usage of energy, decarbonization of the European energy system is urgently needed (European Commission, 2019:6). In the European Green Deal, the transition to clean energy and reducing emissions is based on three major pathways: first, a safe, durable and affordable supply of energy for the European Union is supported, especially to increase self-sustainability and reduce dependencies on a global level. Secondly, the European Green Deal aspires to implement a comprehensive, integrated and digitalized intra-European energy market that homogenizes energy utilization throughout the European Union. Lastly, and especially correlated with the objective of climate neutrality, the European Green Deal proposes a new approach to extensively increase energy efficiency in a diverse range of sectors, thereby inter alia, focusing on more energy-efficient buildings and infrastructure.

To achieve this transition, renewable energy will assume a major role. One major avenue is the offshore renewable energy strategy of the European Union, which is targeting the expansion of energy generation at sea and from the sea. This specific substrategy is combining advantages for the economy, with the

provision of export opportunities and green jobs in coastal areas, for the environment by reducing emissions, and for the society by offering an affordable energy alternative. An important role will also be adopted by the integrated National Energy and Climate Plans of the European Union member States, where future pathways for energy efficiency and sustainability will be laid out. Major objectives of the clean energy strategy of the European Green Deal thus include a merging and harmonization of energy systems, the support for innovative and renewable energies, increased energy efficiency, decarbonization of the gas industry and increasing the rights of energy users (European Commission, 2019, 2020f and n.d.d).

The European Green Deal acknowledges the diversified potential of building renovation and construction in achieving the climate targets of 2030 and climate neutrality in 2050 and has thus introduced the "renovation wave" as an important segment of the European Green Deal. The apparent placement of renovation and construction on the European Union climate agenda is particularly fuelled by the high amount of mineral and finite resources needed for building renovation, use and construction, the considerable consumption of energy through buildings (40%), and the fact that buildings are responsible for 36 per cent of energy-related greenhouse gas emissions as well (European Commission, 2019:9). As a result, the European Green Deal tackles the twin challenges of energy efficiency and affordability by commencing a renovation wave that seeks to transform, modernize and adjust public and private buildings to the emerging challenges of climate change, aspired economic transitions, and concomitant societal transformations. Major incentives behind this strategy are the combined objectives of lowering energy costs, reducing energy poverty, minimizing and mitigating greenhouse gas emissions, and fostering digitalization, all the while supporting a transition to a circular economy model with a boost for the construction sector and additional support for SMEs. The top priorities of the renovation wave comprise an assessment of energy poverty and worst-performing buildings, the priority renovation of public buildings such as schools and hospitals, and the decarbonization of heating and cooling systems. Therewith associated, particular attention shall be given to social housing to keep housing and energy consumption affordable, while money saved through heightened building efficiency will be reinvested in education and health-care systems. However, the Green Deal recognizes the many existing barriers to renovation at different levels, which is why the new building strategy intends to improve information and rights for owners and tenants, guarantee continuous financing, increase the capacities of public authorities, foster the use of sustainable products, and merge areas of responsibility with a preference for community-led, bottom-up approaches. It is thus anticipated that the renovation wave, as well as strict standards for newly erected buildings, can significantly contribute to the achievement of climate neutrality within the European Union and beyond (European Commission, 2019, 2020g, 2020h and n.d.e).

The new European Union Strategy on Adaptation to Climate Change of 2021 is one of the major pillars of the European Green Deal to meet the objective of climate neutrality in 2050. At the core of the Strategy is the quest for making the European Union more climate-resilient and ready to adapt to the unavoidable impacts of climate change while maintaining economic competitiveness and social equity. The Strategy thus represents a long-term vision for the European Union, striving to increase the adaptive capacities and reduce the underlying vulnerabilities. While the Strategy is focusing on the European Union at large, constant exchange and cooperation on a global level is considered a key element for a successful climate change mitigation and adaptation pathway. To this end, the Strategy is well aligned with major global policy frameworks, such as the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, and the SDGs and strives to set an example for sustainable and climate-resilient development that is also affecting global efforts. The underlying actions proposed by the Strategy include an improvement of knowledge and climate change awareness, enhancing the utilization of adaptation planning and climate risk assessments, speeding up concrete adaptation action and assisting capacity-building efforts on a global scale.

The Strategy thus covers three major objectives: first, smarter adaptation aspires to extend the knowledge base regarding adaptation, producing more robust and systematic climate loss data and extending the services of the Climate-ADAPT platform as a major source of adaptation knowledge and stakeholder counselling. Secondly, more systemic adaptation is directed at the respective levels and fields of policy responsible for climate change mitigation and adaptation and strives to ensure better support and assistance for stakeholders and institutions alike. To this end, nature-based solutions, macro-fiscal policy and local adaptation actions are at the forefront of targeted support. Lastly, faster adaptation seeks to significantly accelerate the implementation of adaptation action on all levels. Hence, while the Strategy is setting up strict and purposive objectives for climate change mitigation and adaptation, an emphasis is placed on the necessity of harmonizing international action to reap economic and social benefits from the climate-driven transition as well (European Commission, 2021a).

Interestingly, adaptation is regarded as a cross-cutting element in the European Union's external action, spanning international cooperation, migration, security and other areas: To better address "the shared challenges of interconnected societies (e.g. migration, conflict, displacement), ecosystems (e.g. shared river basins, the ocean and Polar Regions), and economies (e.g. global value chains)", the European Union's attempts to strengthen cooperation and dialogue on adaptation in trade agreements as the major way forward proposed in the document (European Commission 2021a:21). However, migration-related consequences of climate change for the European Union and its member States, as well as positive potentials of migration (as a potential adaptation strategy), are not mentioned (European Commission, 2019, 2021a and n.d.f). Also, displacement is rarely mentioned and if so, only in the international context as part of Europe's external strategy. However, the Commission aims at promoting better coordination and complementarity between post-disaster emergency and recovery operations to encourage the "build back better" principle (European Commission 2021a:11). It is stated that progress in adaptation planning remains slow, and the implementation and monitoring remain even slower. To better tackle this aspect, "the aim of this strategy is, therefore, to shift the focus to developing and rolling out solutions, to help reduce climate risk, increase climate protection, and safeguard freshwater access" (European Commission 2021a:12).

In addition, a new Horizon Europe research and innovation programme called EU Mission: Adaptation to Climate Change (2021–2027) (European Commission, n.d.a) aims at supporting at least 150 European regions and communities towards becoming more climate resilient in 2030. The programme aims to adopt a systematic approach by looking at several key community systems like land use and food systems, critical infrastructure, water management, as well as health and well-being. In addition, it will also examine potential enabling conditions such as (diverse sources of) knowledge, governance or behavioural change. The programme further promotes the development of innovative solutions to adapt to climate change, and encourages communities, cities and regions to lead the societal transformation required.

4.2. Expectable sectoral changes of climate-resilient development: Consequences for migration and skills development

The desired transformations of the European Green Deal will have wide ranging consequences for European labour markets – and migration. Already today, the global economy relies on migrant labour force to different degrees: ILO (2021) concludes that in 2019, 66.2 per cent of the estimated 169 million global migrant workers worked in services, 26.7 per cent worked in industry, and 7.1 per cent have been working in agriculture. With regard to the European Union, 8.84 million non-European Union citizens were employed in the labour market in 2021. The employment rate of non-European Union citizens in 2021 amounts to 59.1 per cent, compared to 74 per cent for European Union citizens. Indeed, most residence
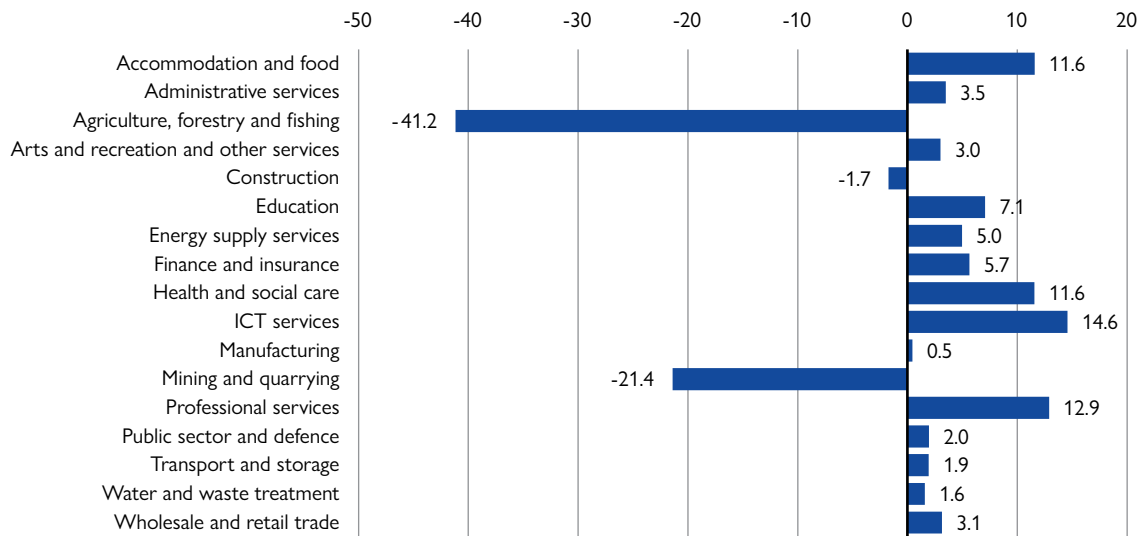
permits were issued for reasons of work, with an increase from 39 per cent to 45 per cent of work permits issued from 2020 to 2021 (European Commission, n.d.g). Non-European Union citizens were disproportionately represented in some key economic sectors, including the following: (a) accommodation and food service (10.2% employment of non-European Union citizens to 3.7% employment of European Union citizens): (b) administrative and support service (7.7% to 3.8%); (c) domestic work (6.7% to 0.7%); and (d) construction (9.2% to 6.6%) (ibid.). The achievement of climate resilience requires change in skills demands, which will affect the sectoral workforces as a whole (ILO, 2021:13). Among others, energy, agriculture, construction and manufacturing are sectors that will undergo significant changes in that regard. The energy sector, for instance, will experience an ongoing shift to renewable energy sources, such as solar, hydropower and wind power. This will not only lead to a general growth in jobs in these areas, but it will also necessarily lead to changes concerning which specific skills sets are required at all levels. In other words, there will be a growing demand for experts in photovoltaics, whereas the job demand for engineers specializing in coal-fired power stations will decrease significantly (ILO, 2019; see also Table 1).

Migration will be a key factor for these transformations – not only since migrant labour is already highly significant for the mentioned sectors at present. There is also a demographic aspect to it, which will be a challenge for European labour force demands: population projections for the European Union for the period 2020–2030 indicate that the population of the 65-plus age group is expected to grow by 18 per cent, whereas the younger population group aged 4 to 18 is expected to decrease by 5 per cent (European Commission, 2021b:1).

Table 1. Sectors most affected by the transition to sustainability in the energy sector by 2030 (Global estimate)

Industries set to witness the highest job demand growth (absolute)		Industries set to witness the highest job demand decline (absolute)	
Sector	Jobs (millions)	Sector	Jobs (millions)
Construction	6.5	Petroleum refinery	-1.6
Manufacture of electrical machinery and apparatus	2.5	Extraction of crude petroleum and services related to crude oil extraction (excluding surveying)	-1.4
Mining of copper ores and concentrates	1.2	Production of electricity from coal	-0.8
Electricity production from hydropower	0.8	Mining of coal and lignite, peat extraction	-0.7
Cultivation of vegetables, fruits and nuts	0.8	Private households with employed persons	-0.5
Production of electricity from solar photovoltaics	0.8	Manufacture of gas, distribution of gaseous fuels through mains	-0.3
Retail trade (except for motor vehicles and motorcycles), repair of personal and household goods/items	0.7	Extraction of natural gas and services related to natural gas extraction (excluding surveying)	-0.2

Source: ILO, 2018:44.

Figure 1. Future employment growth by sectors in EU27 in 2022–2035

Sector	Value
Accommodation and food	11.6
Administrative services	3.5
Agriculture, forestry and fishing	-41.2
Arts and recreation and other services	3.0
Construction	-1.7
Education	7.1
Energy supply services	5.0
Finance and insurance	5.7
Health and social care	11.6
ICT services	14.6
Manufacturing	0.5
Mining and quarrying	-21.4
Professional services	12.9
Public sector and defence	2.0
Transport and storage	1.9
Water and waste treatment	1.6
Wholesale and retail trade	3.1

Source: European Centre for the Development of Vocational Training (Cedefop), n.d.a.

The migration-related challenges of implementing the European Green Deal will also require efforts to reskill or upskill the already existing labour force both in European Union countries and in potential countries of origin. Existing assessments of job skills needed for making economic sectors "greener" (ILO, 2019; Cedefop, 2019) show that there are major gaps when it comes to skills for green jobs within and outside the European Union. Indeed, the European Union "suffers from systemic weaknesses in its skills base which limit productivity and competitiveness and reduce the EU's capacity to exploit the opportunities offered by green growth" (Cedefop, 2010:2), thereby pointing to the fact that management and technical skills, often relating to science, technology, engineering and mathematics, are currently lacking in the European Union. Approximately ten years later, the European Investment Bank (2018) still identified shortages of necessary skills and a mismatch between available skills and needed skills in relevant sectors as major challenges for sustainable growth in Europe. For instance, the Cedefop (2010) states that many countries in the European Union do not have enough engineers on their hands, largely owing to the continuing demographic imbalance, which can lead to problems for larger infrastructural projects and the environmental sector. ILO (2019) comes to the conclusion that although many countries state that they are planning to intensify training measures for the implementation of sectoral and national climate policies in their National Determined Contributions, corresponding efforts must be significantly intensified.

5. Entry points in the European Union migration agenda

The following chapter discusses potential entry points for a renewed recognition of migration for achieving climate-resilient development. As shown in the chapter beforehand, the New European Green Deal and its main sub-elements do not touch upon migration for the most part, and only somewhat indicate the existence of docking points. In particular, migration in light of climate change is barely taken into consideration. This could represent an important omission, given that both the agenda laid out in the New European Green Deal and the potential consequences of climate change imply significant changes for the economic and social well-being in Europe. Projected changes in migration flows as a result of changing climates bear ample potential to also impact on existing labour mobility schemes and other migration patterns, albeit the actual effect of environmental change on migration remains unclear. Given that in-migration to the European Union is urgently needed to fill eminent labour shortages and skills gaps, and because migration could represent an important adaptive strategy for people affected by climate change, an increased level of consideration for migration in the New European Green Deal is certainly warranted. Despite the current dearth of acknowledgement, there are other policy frameworks that provide interesting entry points for a renewed recognition of migration for achieving climate-resilient development. The following chapter thus presents the New Pact on Migration and Asylum, the Skills and Talent Package and the European Skills Agenda as frameworks that hold the potential to align well with the objectives of the New European Green Deal, all the while recognizing the seminal role of migration in the process.

First and foremost, the recently proposed New Pact on Migration and Asylum – which also includes interesting starting points concerning climate resilience (see Text box 1) – perhaps offers the best opportunities to increasingly integrate migration as an important social mechanism with ample potential for achieving climate-resilient pathways into the overall conception of the European Green Deal. The New Pact aims to delineate a new European framework that adequately manages, synthesizes and normalizes migration as an integral part of the European Union's overall agenda. Crucially, the New Pact strives for a contribution of migration to mutual growth and innovation within the European Union and across all member States, while simultaneously addressing some of the key societal challenges of the world today, of which climate change is of growing concern (European Commission, 2020i).

Text box 1. Climate resilience in the New Pact on Migration and Asylum

Although clear-cut linkages and policies focusing on the climate change–migration imperative are largely missing in the New Pact, and climate change is rather viewed as a secondary priority regarding migration, there is potential to align the targets of integrating a comprehensive migration framework with climate-resilient development. One major avenue towards this direction is the advocated need to promote safe and legal pathways for those that require protection and that are most vulnerable. This implies a concentrated effort for revising the existing legal categorizations of migrants, for instance regarding economic migrants, environmental migrants or refugees. Subsequently, this translates to questions on who is fit for asylum and who is eligible to effectively enter the European Union, which the New Pact addresses by "ensuring a consistent standard of reception conditions" (European Commission, 2020i:3). Regarding climate change-related migration, such a legal category and a corresponding blueprint for asylum processes are missing thus far, leaving ample space for improvement. If action is taken on the renewal and harmonization of European Union migration admission procedures, the respective role of climate change-related migration within the overall picture should be re-evaluated as well. Additionally, the explicit emphasis on people with heightened vulnerability also translates well into supporting the goal of climate-resilient development, particularly with the recurrent accentuation of resettlement as one of the main migration management strategies of the future.

Another dimension where the New Pact and climate-resilient development pathways are already closely aligned is regarding the anticipation and reaction to crises and emergencies. The New Pact calls for maximum "resilience and flexibility" (European Commission, 2020i:10) in crises and aims to prepare more rigorously and with improved foresight for future events, which inter alia, include climate change-related disasters and extremes. As a result, the New Pact proposes the Migration Preparedness and Crisis Blueprint, drawing upon an evidence-based approach that requires tailor-made solutions for different crises. Cooperation with third countries using a hotspot approach, strategies like monitoring, establishing a data-based knowledge system, and scaling up local resilience are well in line with both climate-resilient development targets and the overall migration agenda outlined in the New Pact.

The issue of solidarity is raised frequently in the outline of the New Pact, another feature of congruence about climate-resilient development. Offsetting the carbon footprint and finding country-based solutions aligned with the respective emission output can be assessed under the aegis of solidarity (migration as a direct or indirect result of climate change could likewise fall into this category). To meet these goals, the New Pact proposes a strengthening of cooperation with key global institutions and organizations, such as the United Nations and the African Union. Both organizations, and many others, also heavily invest in bridging climate change-related issues with adequate migration policies, which can be expanded to also fit the European Union's agenda.

Lastly, the New Pact also recognizes "the potential of migrant workers to contribute to the green and digital transitions by providing the European labour market with the skills it needs" (European Commission, 2020i:25). Partnerships and incentives for young talents shall simultaneously address the needs of the European labour market, foster climate-resilient development, and link migration to a structure of mutual prosperity for countries of origin and destination, while at the same time recognizing the responsibility to protect the ones in need.

In general, the New Pact on Migration and Asylum aims at balancing global responsibility and the objective of solidarity together with retaining European Union member States' sovereignty and rights to determine their respective volumes of admission (European Commission, 2020i). However, the document particularly stresses the need to embark on a more comprehensive and integrative regulation for migrant admission to reap the benefits for the European Union economy and the labour market. One central strategy of the European Union is deepening cooperation with third-country partners to identify and manage legal

and safe pathways of migration, especially correlated to match people, skills and labour market needs. To this end, it is argued that existing and novel labour migration schemes must be set up to support the needs of employers as best as possible. Crucially, the European Union thus also wishes to include the third-country partners directly and more strategically in migration strategies. These partnerships will moreover provide a single consistent framework for European Union member States and bridge the gap between involved institutions. The New Pact also proposes a revision of the European Union Blue Card Directive (completed in 2021) to establish a European Union-wide level playing field where labour mobility between European Union member States is enhanced and fostered. The European Union names the recent revision of the Blue Card Directive an "important first step to improve the European Union's attractiveness" (European Commission, 2022b:5), as it now caters for improved workers' rights and quicker and streamlined procedures that guarantee a swifter process of labour mobility. While national admission schemes prevail, the New Pact pledges a compromise that unifies national approaches into a more flexible, general approach in the quest to attract young talents. A goal in that regard is also to increase the international migration of students and researchers, for instance via fully implementing the recent Directive on Students and Researchers (European Commission 2020i). Lastly, the European Union also aims to advance in the segment of visa facilitation via implementing and adjusting the recently revised Visa Code, thereby enabling vital short-term migration, and reducing barriers to intra-European Union movement (ibid.).

The New Pact on Migration and Asylum portrays migration as beneficial, constructive and urgently necessary, which relates to the looming structural problems of European Union demographics and emerging issues on the European Union labour market. A shrinking and ageing population, as well as structural skill and labour force shortages in many important economic sectors, including inter alia construction, manufacturing, energy, medical care and agriculture (European Commission, 2020i and n.d.c), will place immense pressure on the European economy in the years to come. Legal migration is thus seen as a major incentive to close the widening skills gap and intends to increase the European labour market dynamism. Workers from third countries often fill key shortages in critical employment positions, which just recently came to the fore in the wake of the COVID-19 pandemic (European Commission, 2020i). While upskilling the domestic labour force is certainly needed, this will not suffice to stem the emerging challenges for the European labour market (ibid.).

In April 2022, the European Commission presented the Skills and Talent Package as a deliverable of the New Pact on Migration and Asylum, providing further entry points to open up the discussion of merging climate-resilient development pathways with objectives of the European Union migration policy. The aim of the Skills and Talent Package is to further make the European Union more attractive to international talents based on an improvement of legislative, operational and future-oriented pillars of labour mobility (European Commission, 2022b). For instance, the Skills and Talent Package outlines the proposed revision of the Single Permit Directive in order to streamline the application procedure for a combined work and residence permit that includes safeguards for equal treatment and protection from labour exploitation (European Commission, n.d.h). Moreover, a revision of the Long-term Residents Directive seeks to (further) ease the process of acquiring the long-term residence status by simplifying the admission conditions and to enhance rights of residents and their family members, including the rights to move and work in another European Union member State (European Commission, 2022b).

As part of the Skills and Talent Package operational measures, the European Union Talent Pool pilot initiative was launched, responding to the flows of refugees from the Ukraine after the Russian Federation's invasion. Croatia, Cyprus, Finland, Lithuania, Poland, Slovakia and Spain joined the pilot (European Commission, n.d.i). The major purpose of the Talent Pool is to facilitate the matching of third-country (prospective) workers with potential employers across the European Union and thus facilitate an

effective labour market integration (European Commission, 2022b; Wagner et al., 2022:2). It is planned that the overall European Union Talent Pool will be launched by the end of 2023. Importantly, the European Union Skills and Talent Package further describes the Talent Partnerships with third countries to strengthen cross-regional cooperation in the field of skills and labour migration. Talent Partnerships suggest a shift from pilot approaches[4] towards more structured legal migration pathways comprising capacity-building, skills and vocational training, and integration measures as major elements (European Commission, 2022b).

The proposed measures of the New Pact on Migration and Asylum and the Skills and Talent Package benefit from precursor programmes and initiatives that laid the groundwork for some of the measures of the New Pact, including but not limited to the European Qualifications Framework (EQF). The EQF is based on the Recommendation of the European Qualifications Framework for lifelong learning, which was adopted by the European Parliament and the Council in 2008, and was revised in 2017 (Cedefop, 2019 and 2022). The EQF has been created as a common European reference framework. Its major purpose is to "make qualifications more readable and understandable across different countries and systems. Covering qualifications at all levels and in all sub-systems of education and training, the EQF aims at providing a comprehensive overview of qualifications in the 38 European countries currently involved in its implementation" (Cedefop, n.d.b:1).[5] Cedefop and the European Commission are supporting the implementation of the EQF and carrying out several comparative studies and analyses on issues related to the implementation of the framework at the European Union, national and sectoral levels (Cedefop, n.d.b).

Moreover, the European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience can also be named as an important entry point that holds potential to link some of the shared issues in the European Union migration policy and concerning the objectives of the New European Green Deal. The European Skills Agenda is a five-year plan (2020–2025) and was launched in June 2020, thereby aiming at the following: (a) strengthening sustainable competitiveness, as set out in the New European Green Deal; (b) ensuring social fairness – and thereby supporting access to education, training and lifelong learning for everybody and everywhere in the European Union; and (c) and building resilience to react to crises. The major objectives of the European Skills Agenda, among others, include European Union support for strategic national upskilling action, a proposal for a Council Recommendation on VET, and skills to support the twin transitions of digital and green transformations. Importantly, the European Skills Agenda also acknowledges the necessity to include the potential and the skills of third-country migrants already residing in the European Union and intends to broaden opportunities for regular immigration to the European Union (European Commission, 2020a). This incorporates cooperation with partner countries "to promote both development and mobility through increased investments in skills" (European Commission, 2020a:9). Crucially, the year 2023 also represents the European Year of Skills as inherent part of the European Skills Agenda with corresponding events and awareness-raising campaigns. The European Year of Skills specifically aims to centre the importance of skills for a fair and just green and

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4   The Migration Partnership Facility (MPF), established in 2016, is an initiative funded by the European Union to support the external dimension of the European Union migration policy. The MPF aims at strengthening dialogue and cooperation on migration between the European Union member States and partner countries outside the European Union. The MPF supports European Union migration priorities with partner countries and corresponding labour mobility schemes and therewith associated projects. The current geographic coverage mainly includes the Western Balkans, Eastern Partnership countries and Africa. So far, the MPF has funded more than 40 projects, involving 15 European Union member States and 12 partner countries (MPF, n.d.a).

5   By September 2021, 35 countries/places had formally linked their national qualifications frameworks to the EQF: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, North Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Montenegro, Kingdom of the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Sweden, Switzerland, Türkiye and Kosovo.* Furthermore, pilots comparing third-country qualifications frameworks with the EQF have been carried out with the Australian Qualifications Framework, the New Zealand Qualifications Framework and the Hong Kong Qualifications Framework (Cedefop, n.d.b:1).

* References to Kosovo shall be understood to be in the context of United Nations Security Council resolution 1244 (1999).

digital transition in Europe and intends to both assist people in acquiring the right skills for fitting jobs and help companies, especially SMEs, to address their skill shortages. With a range of skill-related events all across Europe, the European Union particularly wishes to foster an "easier recognition of qualification across borders" (European Union, n.d.) and thereby specifically mentions the importance of migrants in the process.

The European Skills Agenda includes the following 4 building blocks with 12 actions (European Commission, 2020a):

(a) A call to join forces in a collective action (comprising Action 1: A Pact for Skills);

(b) Actions to ensure that people have the right skills for jobs (including the following: (i) Action 2: Strengthening skills intelligence; (ii) Action 3: European Union support for strategic national upskilling action; (iii) Action 4: Proposal for a Council Recommendation on VET; (iv) Action 5: Rolling out the European Universities Initiative and upskilling scientists; (v) Action 6: Skills to support the twin transitions; (vi) Action 7: Increasing science, technology, engineering and math (STEM) graduates and fostering entrepreneurial and transversal skills; and (vii) Action 8: Skills for life);

(c) Tools and initiatives to support people in their lifelong learning pathways (including the following: (i) Action 9: Initiative on individual learning accounts; (ii) Action 10: A European approach to micro-credentials; (iii) Action 11: New Europass platform);

(d) A framework to unlock investments in skills (comprising Action 12: Improving the enabling framework to unlock member States' and private investments in skills).

The Pact for Skills (Action 1) aims to establish a shared model for skills development in Europe in order to pool resources and engage in concrete upskilling and reskilling initiatives in the cultural and creative industries. The partnership will promote learning opportunities and on-the-job training to strengthen the resilience of the sector and equip its professionals with the skills they need. It will have "a particular focus on digital, green, entrepreneurial and technical skills as well as on arts and crafts. The partners involved have agreed on commitments and indicators to improve skills intelligence, new training programmes and the number of people trained. For instance, the partners will promote the mutual recognition of training paths across EU countries" (European Commission, 2022c). The European Skills Agenda does not have a particular focus on migration and migration-related issues; However – and although there is a lack of comprehensive and targeted possibilities for adequate preparation and training for those that acquire permits to work in the European Union – it heavily relies on migrant workers and labour, as well as education-related mobility schemes to reach its objectives. Also in this case, issues of climate-related migration do not come to the fore but could represent an important entry point when the European Union is confronted with the following: (a) the need for skilled workers to fill the eminent gaps in the labour market; and (b) impacts of climate change increase and thereby start to shift existing patterns of migration. In such case, the European Skills Agenda already offers a sound and operating system for attracting skills and talents to the European Union that could be merged with climate-related migration flows – in the case this becomes relevant – in order to foster the achievement of overall climate resilience in Europe.

In order to circumvent above-mentioned concerns and to really match the skills and talents of migrants from the European Union Talent Pool with the suitable employers, countries increasingly need to improve and build on their LMIS as an important tool to foster the twin transition, all the while successfully integrating migrant labour into the proposed schemes. Some countries with already advanced LMIS have

upgraded those to also include job matching and information on careers in green economic sectors besides merely capturing labour market data and research on the evolution of occupations. For instance, France's *Observatoire national des emplois et métiers de l'économie verte* (Onemev) now also monitors labour market data aiming to enhance skills for the green economy. Furthermore, Onemev also provides a dialogue platform for bringing government institutions, researchers and other relevant stakeholders from the economic and the environmental sector closer together (Cedefop, 2019; Gençsü et al., 2020). Furthermore, the actual matching of potential candidates holding the required skills with corresponding job vacancies requires additional structures, such as effective employer networks (Wagner et al., 2022), which also demands for further improvements with regard to the existing structures of the European Skills Agenda, the European Union Talent Pool and the Skills and Talent Package as part of the New Pact on Migration and Asylum. While certain overlaps and docking points between these frameworks are certainly given, an additional provision of both sophisticated information and employer networks would strengthen the linkages between them considerably.

These frameworks also provide an opportunity to enhance the training and preparation of employers to understand and address the specific needs of migrants and benefit from targeted support in this regard.

Moreover, VET has for long been an area of cooperation within the European Union and could represent an important avenue to further bolster the chances of success for the equitable, fair and frictionless integration of non-European Union nationals into the European labour market. The ample potential of VET in that regard is also related to the fact that its formerly rather static concepts as an educational pathway preparing young people for a direct entry to the labour market do not exist any longer. VET systems of European Union member States have become more open, and access routes to higher or further education have been developed, including a shift to increasingly focus on learning outcomes and competence-based approaches (Cedefop, 2022). Despite some common drivers (such as demographic challenges) that could be identified for reforms within the national VET systems in European Union member States, different labour market demands have nonetheless perpetuated the diversity of VET across Europe as yet. And only a few years from now, it is expected that national qualification frameworks in most European Union member States will have been established (Markowitsch and Hefler, 2019). Furthermore, the European Union also provides a range of funding opportunities for public entities and other stakeholders, including that can be utilized to directly reskill and upskill those segments of the European labour force that will be confronted with considerable occupational shifts due to the green and digital twin transition and the changes that arise with the quest for climate-resilient development (see Appendix).

Finally, bilateral labour migration schemes, which are usually organized between European Union member States and non-European Union countries, hardly have focused on climate-resilience or green skills.[6] Digital skills seem to be rather focal in that regard, and the potential of climate change to cater for both shifts in existing migration patterns and within the European labour market (demands) has not been acknowledged to a considerable degree. Furthermore, apart from agreements for seasonal agricultural workers, most bilateral labour mobility schemes rather focus on high-skilled professions or mid-level professions. Although there is a growing demand at all skill levels, many shortages are found in low-skilled and middle-skilled occupations. In addition, only a few countries also include skills development in their planning efforts, which would be an important step forward in assuring not only that potential migrants with specific skills match the needs of employers in the European Union, but that skills-based migration is

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6   An exception is the MPF funded project "Co-development for innovation and employment in the green and circular economy between Andalusia and Morocco (MOVE_GREEN)". The project aims at supporting networking opportunities and professional qualifications for young Moroccans seeking to work in the renewable energy and green economy sector. MOVE_GREEN also seeks to increase employability and entrepreneurial capacity and strengthen cross-border public–private partnerships between Morocco and Andalusia (Spain) at the local and regional levels to promote circular mobility and mutual development (MPF, n.d.b).

truly beneficial for all parties, by considering the needs of countries of origin too. Furthermore, although several low- and middle-income countries, such as Rwanda, Tajikistan or Zambia, have developed policy strategies concerning skills development for green jobs, gaps concerning implementation, data collection and systematic anticipation of needs in skills development and training still exist (Adaawen, forthcoming). As such, and especially with the looming prospects of climate change becoming more serious, a comprehensive acknowledgement of migration as crucial mechanism to foster climate-resilient development still has to be included in many of the existing bilateral labour migration schemes and across all skill levels.

6. Conclusions

With the New European Green Deal, the European Commission has presented an ambitious plan to lead the European Union on a climate-resilient development pathway, which is described by the IPCC as the combination of strategies to adapt to climate change with actions to reduce greenhouse gas emissions and support sustainable development for everyone. A weakness of the New European Green Deal, however, is that it hardly takes the migration factor into account. Migration is of enormous importance for the successful implementation of climate-resilient development in several aspects, especially regarding the fundamental changes that are expected to transpire in the labour market, which particularly concerns some of the key sectors, such as energy, construction or agriculture. On the one hand, the climate-resilient transformation will likely entail a net increase in vacant employment positions, a shortage that is unlikely to be manageable without additional migration to the European Union. On the other hand, these sectors, most of them bearing particular importance for the transformation towards climate resilience, are already dependent on workers with migration background to a considerable extent. In that case, it is crucial to offer adequate reskilling and upskilling measures to prepare these affected segments of the European Union labour force for the twin digital and green transition. The European Union has – in theory – some tools at its disposal (such as the New Pact on Migration and Asylum, the European Skills Agenda and the Skills and Talent Package) to tackle these major migration-related tasks, whereby many of these tools already offer some docking points to increasingly merge the co-dependent agendas of climate-resilient development (as outlined in the New European Green Deal) and an overarching European Union migration policy (as for instance in the New Pact on Migration and Asylum). However, it is important to address a few weaknesses here. The following issues demand attention in that regard:

(a) Quite surprisingly, and although both the arising challenges of climate change and the adequate management of migration has been high on the European Union policy agenda as of late, a merging of the two spheres in the design of mobility schemes has not been met with appropriate assertiveness. Hence, **an introduction of climate-resilient development approaches and corresponding considerations regarding the green transition have to be firmly anchored in the design and the subsequent implementation of mobility schemes,** such as Talent Partnerships and other existing labour mobility agreements. Including climate resilience in the set-up of such schemes can involve mutual feedback effects and is also likely to contribute to the objectives of the Green Deal as a whole. On the one hand, labour mobility schemes would profit from the knowledge and the expertise of skilled non-European Union nationals while at the same time catering for the need to fill the eminent labour shortages in Europe. On the other hand, well-crafted labour mobility schemes that also involve reskilling or upskilling of the respective migrant labourers, as well as skills development on countries of origin can assist third-country partners in regaining trained experts in their respective professions and can foster the build-up of sustainable and lasting partnerships.

(b) Skills-based migration will be, therefore, crucial to achieve pathways towards climate-resilience and a successful green and digital twin transition. To ensure that these objectives are met, an effective **development and harmonization of skills and skills and qualification recognition frameworks within the European Union and third-country partners** would be an important

step towards facilitating the matching of talented and skilled labourers and the actual labour market demands across the European Union and between the European Union and relevant third countries. Thus, the focus could not just be on European Union member States, but such efforts should be linked to regional initiatives outside of Europe as well. For instance, the Agenda 2063 of the African Union specifically aims to implement frameworks on labour migration governance and intends to foster public–private partnerships for the creation of jobs and inclusive development. Initiatives like this could represent an important avenue of cooperation to ensure climate-resilient development of both the European Union and the respective partners.

(c) Besides the aforementioned mechanisms to better recognize and match the respective skilled talents and potential European Union employers, an **effective development and a corresponding harmonization of LMIS** would represent another important step in the right direction. This would allow for both the continuous analysis of **changes in skill and labour demands for the climate-resilient transition,** as well as for the **implementation of reskilling and upskilling** opportunities to react to these changes. Certainly – and that is also valid for other relevant areas of action – it has to be recognized that many of these tasks fall in the responsibility of the respective European Union member States, but a European Union-wide process of harmonization across national interests bears ample potential to facilitate and accelerate a swift process of integrating non-European Union nationals into the European labour market while being aligned with the envisaged climate-resilient development pathways.

(d) Moreover, in view of the adverse effects of climate change and considering the magnitude of the challenges of achieving climate resilience, **climate-resilient development should play an essential role in the curricula of VET, skills development and education in general.** Ultimately, this educational focus should not be restricted to offers for migrants and refugees, but has to be implemented on a broad scale in order to firmly anchor the necessity of achieving climate resilience in the European society, thus also laying the groundwork for crucial societal choices that will likely decide on the successful outcome of the envisaged climate-resilient development pathways.

(e) Finally, a successful aligning of **migration and climate-resilient development also requires close cooperation (including monitoring, involvement and support) of many groups, organizations and institutions** at different levels (governments, private sector, civil society and others) and scales (local, national, European Union-wide, global). Such cooperation should thereby also include diaspora organizations, employers' associations, city networks, international organizations, educational institutions to name but a few. Closely knit linkages between these stakeholders and across scales can contribute to recognize and utilize the potential of migration for achieving both economic prosperity and societal well-being in Europe while embarking on the envisioned climate-resilient development pathways. Although the New European Green Deal has not yet fully tapped into the potential and the importance of migration, the delineated measures as well as the presented policy frameworks already provide some important docking points that could be further utilized to full capacity.

Appendix: European Union funding instruments for upskilling and reskilling

European programme/fund	Scope regarding skills	Expected volume, 2021–2027 (Total budget of programme/fund)
InvestEU*	The Social Investment and Skills Window (SISW) will cover both the demand and supply side of skills. Support will target students and learners, SMEs and mid-caps, as well as providers of training.	InvestEU: EUR 26.2 billion SISW: EUR 2.8 billion (Budget guarantee)
European Fund for Strategic Investments (EFSI)*	The Skills and Education Pilot is a new debt financing initiative dedicated to stimulating investments in education, training and skills. Final beneficiaries include students and learners, SMEs, mid-caps and training providers.	EUR 50 billion (European Union budget guarantee)
Recovery and Resilience Facility (RRF)**	Development of skills to support green and digital transition and resilience.	EUR 672.5 billion
Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU)**	Skills development and relevant infrastructure and equipment are linked to fostering crisis repair in the context of the COVID-19 pandemic and preparing a green, digital and resilient recovery of the economy.	EUR 47.5 billion
European Social Fund Plus (ESF+ under shared management)**	Modernizing education and training systems; promoting equal access to quality and inclusive education and training; providing flexible upskilling and reskilling opportunities for all; anticipating new skills requirements based on labour market needs.	EUR 87.3 billion
European Regional Development Fund (ERDF)**	Infrastructure and equipment for education and training; development of skills supporting industrial transformation and smart specializations.	EUR 200.4 billion
Just Transition Fund (JTF)**	Development of skills focused on reskilling of workers in regions affected by the economic and environmental transition.	EUR 17.5 billion
Digital Europe Programme**	High-level digital skills.	EUR 6.761 billion
Erasmus+**	Learning mobility of learners and staff (trainers, people responsible for upskilling and reskilling); strategic partnerships working on new and better solutions supporting upskilling and reskilling; projects defining cooperation models with SMEs to support upskilling and reskilling; blueprints for sectoral cooperation.	
European Agricultural Fund for Rural Development (EAFRD)**	Knowledge exchange and information in rural areas.	EUR 95.5 billion
Employment and Social Innovation (EaSI) strand of the ESF+***	Support for innovative approaches in the field of upskilling and reskilling.	EUR 676 million
European Globalisation Adjustment Fund for Displaced Workers (EGF)***	Upskilling and reskilling of workers at risk of losing their job due to globalization or restructuring at the local level.	A maximum annual amount of EUR 186 million
Support to mitigate Unemployment Risks in an Emergency (SURE)***	SURE exclusively supports national short-term work schemes (that is, salary compensation for reduced working time). Where envisaged under short time-work schemes, SURE can also provide support to upskilling and reskilling measures for workers benefiting under the schemes.	Up to EUR 100 billion

Source: European Commission, n.d.h.
Notes: *Accessible through financial intermediaries; **accessible through national authorities; ***accessible through the European Commission.

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