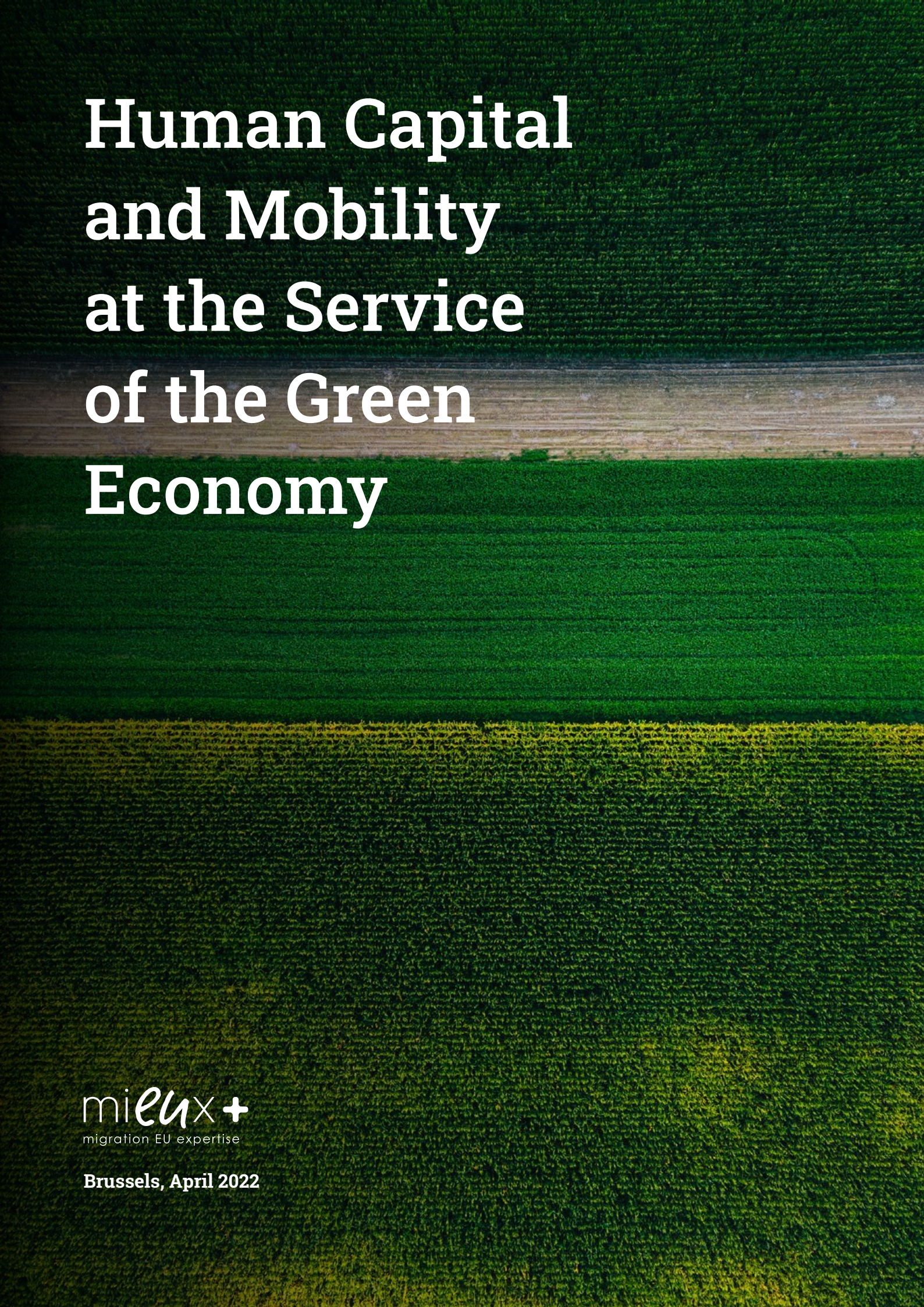

Human Capital and Mobility at the Service of the Green Economy

migration EU expertise

Brussels, April 2022

Human Capital and Mobility at the service of the Green Economy

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Glossary

Active labour market policies (ALMPs): "policies that provide labour market integration measures to those looking for jobs, usually the unemployed, but also the underemployed and even the employed who are looking for better jobs" (ILO, 2019a, p.199).

Circular economy: "an economy based on goods that are designed for durability, repair, re-use and recycling. It seeks to maximize the value of goods while in use, but also after their life cycle, by reincorporating components as inputs into new products. A circular economy also favours the use of goods through services (e.g. rent) over ownership" (ILO, 2018a, p.186).

Core skills: refers to "non-vocational, non-technical skills or competencies that are needed to perform at work and in society. .. includes the ability to work with others and in teams; the ability to solve problems and use technology; communications skills; and learning-to-learn skills. Core skills are also called generic skills, key competencies, key skills, portable skills, soft skills and transferable skills" (ILO, 2018a, p.186).

Decent work: "sums up the aspirations of people in their working lives – for opportunity and income; for rights, voice and recognition; for family stability and personal development; and for fairness and gender equality" (ILO, 2019a, p.200).

Digital Transition: describes the process of presenting improved digital technologies and automation to empower people, businesses and administrations to a facilitate digital transformation and growth for the benefit of all. It involves deploying innovative solutions to people and businesses, and to enhance access and efficiency of businesses and public services (European Commission, n.d.).

EU Green Deal: "new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use" (European Commission, 2019, p.2).

Full-time equivalents: this describes "one person working full time over the course of a year (specific definitions of how many hours per work week constitute full-time employment vary, depending on national legislation or local practice" (IRENA, 2021a, p.16).

Green economy: economy that leads to "improved human well-being and social equity, whilst significantly reducing environmental risks and ecological scarcities" (UNEP, 2011a, p.16).

Greening the economy: describes the process of "reconfiguring businesses and infrastructure to deliver better returns on investments of natural, human and economic capital, while at the same time reducing social disparities (ILO, 2019a, p.201).

Green Jobs: "jobs that reduce the environmental impact of enterprises and economic sectors, ultimately to levels that are sustainable" (ILO, 2019, p.201).

Green spending: refers to expenditure that is targeted at reducing greenhouse gas emission and enhancing nature-based solutions (see Batini et al., 2021, p.5).

Green structural change: describes the effect of the green economy in causing "...the rise of new industries and the decline of old industries – results in some workers finding their skills in high demand whilst others may find their skills redundant" (Strietska-Ilina et al., 2011, p.55).

Green transition: refers to all processes reflecting the transformation or shift to low carbon, climate neutral and resilient economies through the use of green technology, sustainable industries, production and consumption (see ILO, 2019a, p.201).

Just Transition: a way to ensure that the transition to climate neutral/environmentally sustainable economies and societies is fair, inclusive and allows for decent and poverty reduction for all (ILO, 2015d, p.8; Just Transition Centre, 2017, p.1).

Labour (Work) Force: includes "both employed (employees and self-employed) and unemployed people, but not the economically inactive, such as pre-school children, school children, students and pensioners" (Eurostat 2020).

Low-carbon economy: "an economy that produces minimal greenhouse gas emissions. Its fundamental aims are to achieve high energy efficiency, and to use clean and renewable energy via technological innovation, while maintaining the same levels of energy security, electricity supply and economic growth" (ILO, 2019a, p.202).

Person-days: this is a measure that determines the "amount of work done by one person working full time in one day. Person-days cumulate over time, so if the same person performs a task for two years, it is counted as one job, but two person-years. Person-years are most useful for estimating the amount of effort being devoted to a task over its lifetime" (IRENA, 2021a, p.16).

Reskilling: this describes the process of acquiring or learning new skills to enable workers do a new job. In other words, reskilling refers to "training for employees who have shown they have the aptitude to learn a completely new occupation (Partnership for Public Services, 2019, p.6).

Skills development: "understood in broad terms to mean basic education, initial training and lifelong learning (ILO, 2019a, p.204).

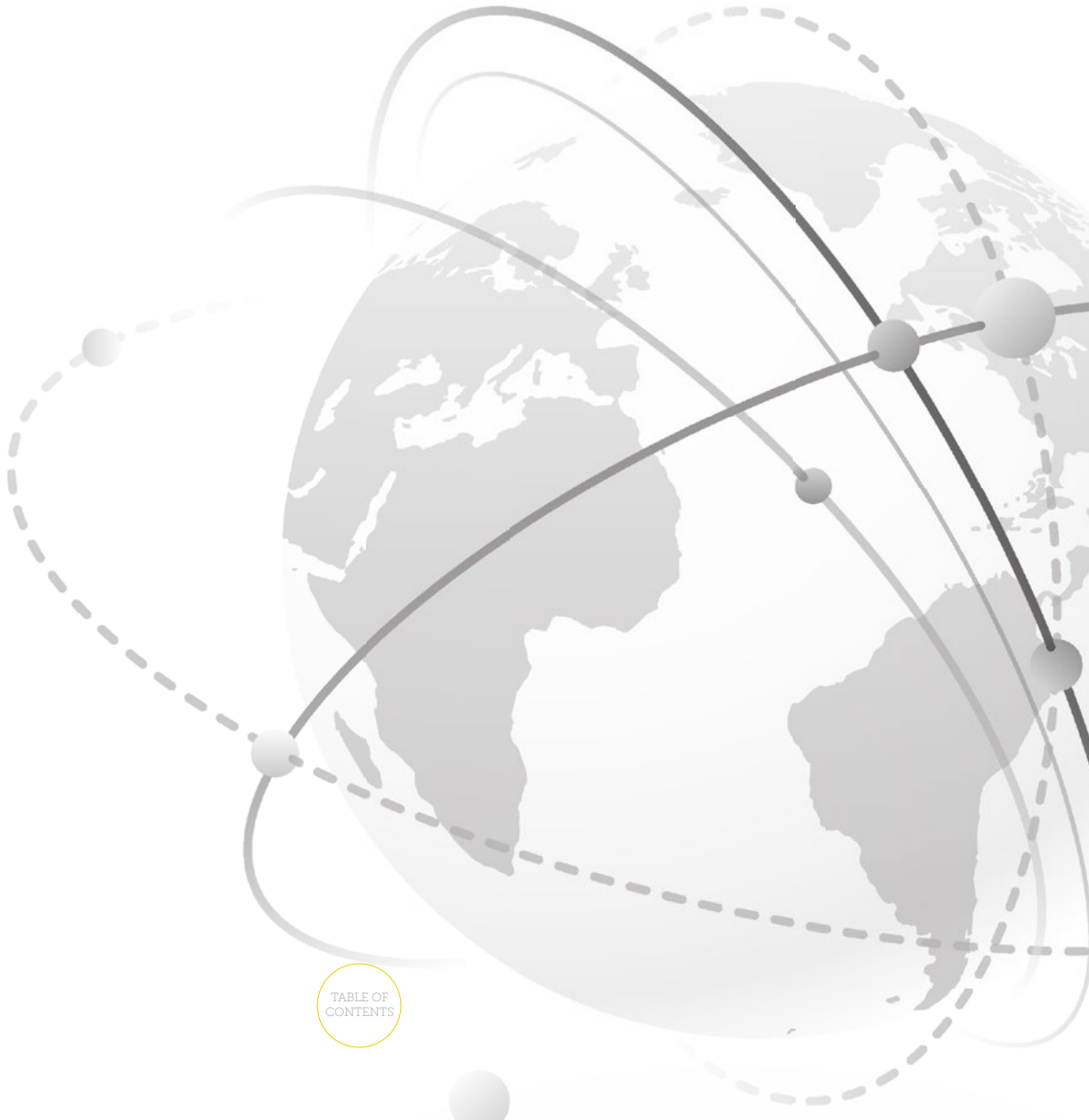
Skills gaps: "a term to describe the qualitative mismatch between the supply of human resources and the requirements of the labour market. 'Skills gaps' exist where the existing workforce does not have adequate types or levels of skills to meet business objectives; or where new entrants to the labour market are apparently trained and qualified for occupations but still lack some or all of the skills required " (ILO, 2019a, p.204).

Skills shortage: "an overarching term which covers both skills gaps and labour shortages. A skills shortage is a genuine lack of adequately skilled individuals available in the accessible labour market with the type of skill being sought, leading to a difficulty in recruitment, with employers unable to recruit staff with the skills that they are looking for at the going rate of pay (ILO, 2019a, p.204).

Technical and vocational education and training (TVET): "initial and continuing education and training provided by schools, training providers or enterprises that imparts the skills, knowledge and attitudes required for employment in a particular occupation, or group of related occupations, in any field of economic activity " (ILO, 2019a, p.205).

Third Country: this refers to "a country that is not a member of the European Union, as well as a country or territory whose citizens do not enjoy the right to free movement the Europeans as outlined in Article 2(5) of Regulation(EU) 2016/399(Schengen Borders Code)" (European Commission, n.d.).

Upskilling: refers to teaching workers new or advanced skills to enable them match the changing skills demand or requirements their jobs. It involves "training employees in a particular occupation with new skills to improve how they perform their jobs..." (Partnership for Public Service, 2019, p.6).



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Acronyms

AU – African Union

CEDEFOP – European Centre for the Development of Vocational Training

DIFD – Department for International Development

EU – European Union

EUDiF – European Union Global Diaspora Facility

DFID – Department for International Development

DG NEAR – Directorate-General for Neighbourhood and Enlargement Negotiations

GIZ – Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH

GHG – Greenhouse Gas

GSPs (Model) – Global Skills Partnership

ICMPD – International Centre for Migration Policy Development

ILO – International labour Organization

IOM – International Organization for Migration

LICs – Low-income countries

MIEUX+ – Migration EU eXpertise + Initiative

MPF – Migration Partnership Facility

MSMEs – Micro, Small and Medium Enterprises

OECD – Organisation for Economic Co-operation and Development

TPs – Talent Partnerships

TVET – Technical and Vocational Education and Training

UNDP – United Nations Development Programme

UNECA – United Nations Economic Commission for Africa

UNEP – United Nations Environment Programme

UNGA – United Nations General Assembly

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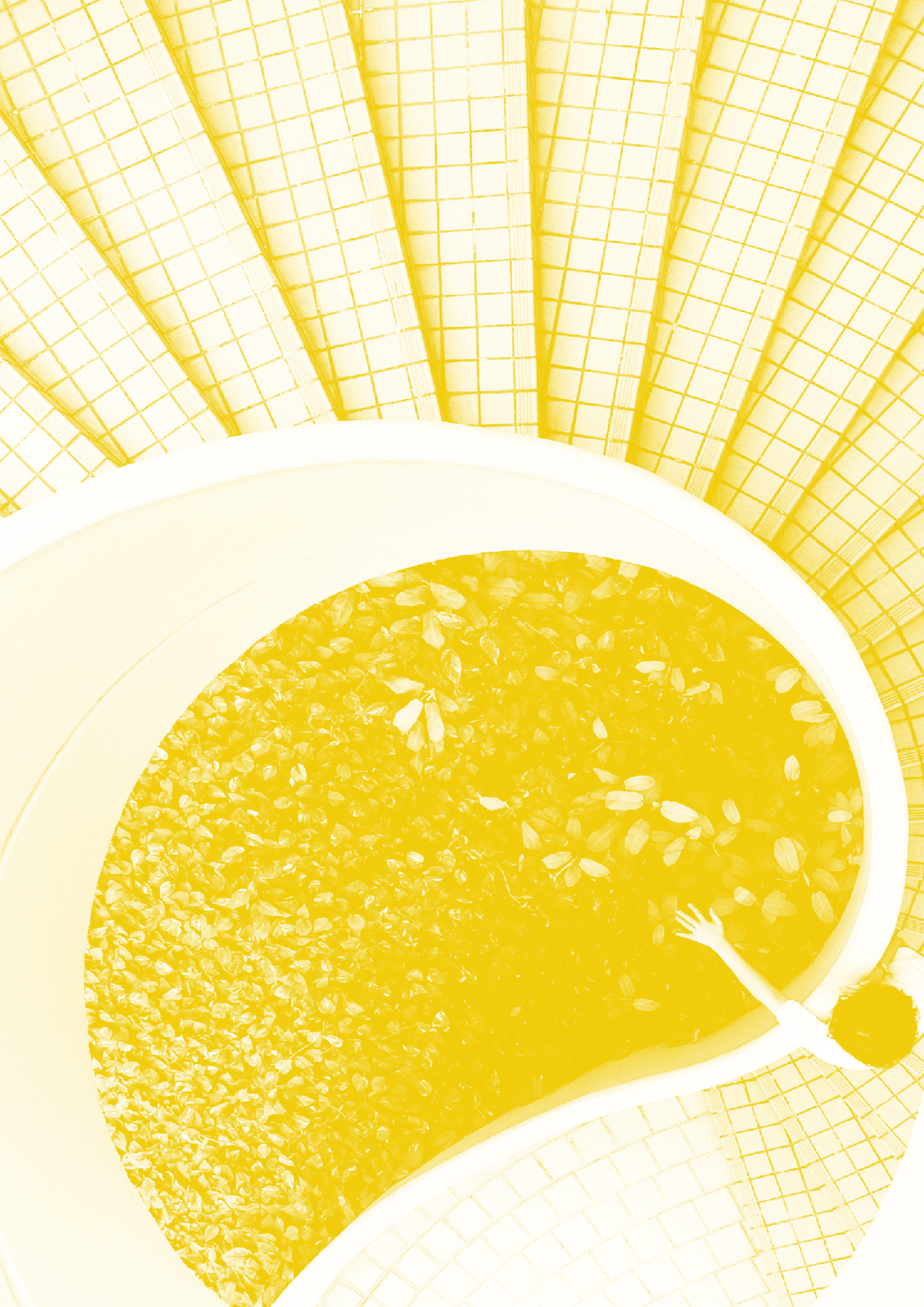


Introduction

Over the course of the last decade, the uncertainty and gloomy forecasts of global poverty, inequality and climate change impact on socio-ecological systems have given impetus to calls and widespread global resolve to decouple economic development from environmental and natural capital degradation and enhance sustainable development (World Bank, 2012; Barbier and Markandya, 2013).

These concerns have largely informed the ongoing global shift and growing emphasis on green economy as a sustainable growth strategy to stem this scenario and to build the sustainable "Future We Want" UNGA 2012) and more recently, to "Build Back Better" from the COVID-19 pandemic (UNEP, 2021). The vision of green economy is to be realised by instituting the necessary measures, strategies and policies to facilitate sustainable development, just, inclusive and resilient societies for all (UNEP, 2021). Against this background, there is now increasing resolve and commitment of countries to pursuing environmentally sustainable or green economic growth strategies (see, for example, Republique du Senegal, 2015; Republic of Mauritius, 2017; Republic of Rwanda, 2020) and at a regional level, the recent EU Green Deal (2019).

However, with countries still struggling to recover from the impact of COVID-19, the compounding effect of skills shortages and a shrinking work force in most countries (among which are many EU MS) will have negative implications for the green economy as a growth strategy. In fact, having an adequate, skilled and adaptable workforce is of essence in maintaining competitiveness and driving the economic growth prospects in every country. This thus underscores the need to examine the potential of labour migration, human mobility[1], skills development and transfer to address the skills requirements of the green economy.

In spite of ongoing efforts to promote regular migration channels, skills development and to attract talent from abroad, there has been limited policy and scientific discussion on the link and the critical role of migration in contributing to the green economy (see, for example, Gregson et al., 2016; Gençsü et al., 2020). This discussion paper thus aims to contribute to the nascent scientific and policy discussion by exploring the links between human mobility and the green economy. The paper analyses avenues for crossover between migration and green economy and identifies points of entry and avenues to leverage labour migration in propelling the transition to greater sustainability, and building inclusive, just and resilient societies. It argues for the inclusion of labour (migration) and mobility as part of green growth strategies and is directed at policymakers, practitioners and academics working on the intersection of development, migration and labour policies.

As part of the discussion, practical examples from different regions and countries across the globe are highlighted to reflect on how they are addressing the inherent transformations triggered by the ongoing transition to green economy, lessons learnt and the possibility to draw on good practices for the implementation of the EU Green Deal. Based on the insights drawn, the paper offers some recommendations on ways forward, as well as forecasting major areas of opportunities and challenges. The discussion then proposes further avenues for discussion and research in this domain for the upcoming years.

[1] including short-term movement of people for less than 12 months for specific purposes (e.g. for short-term training, exchange or even internships and apprenticeships)

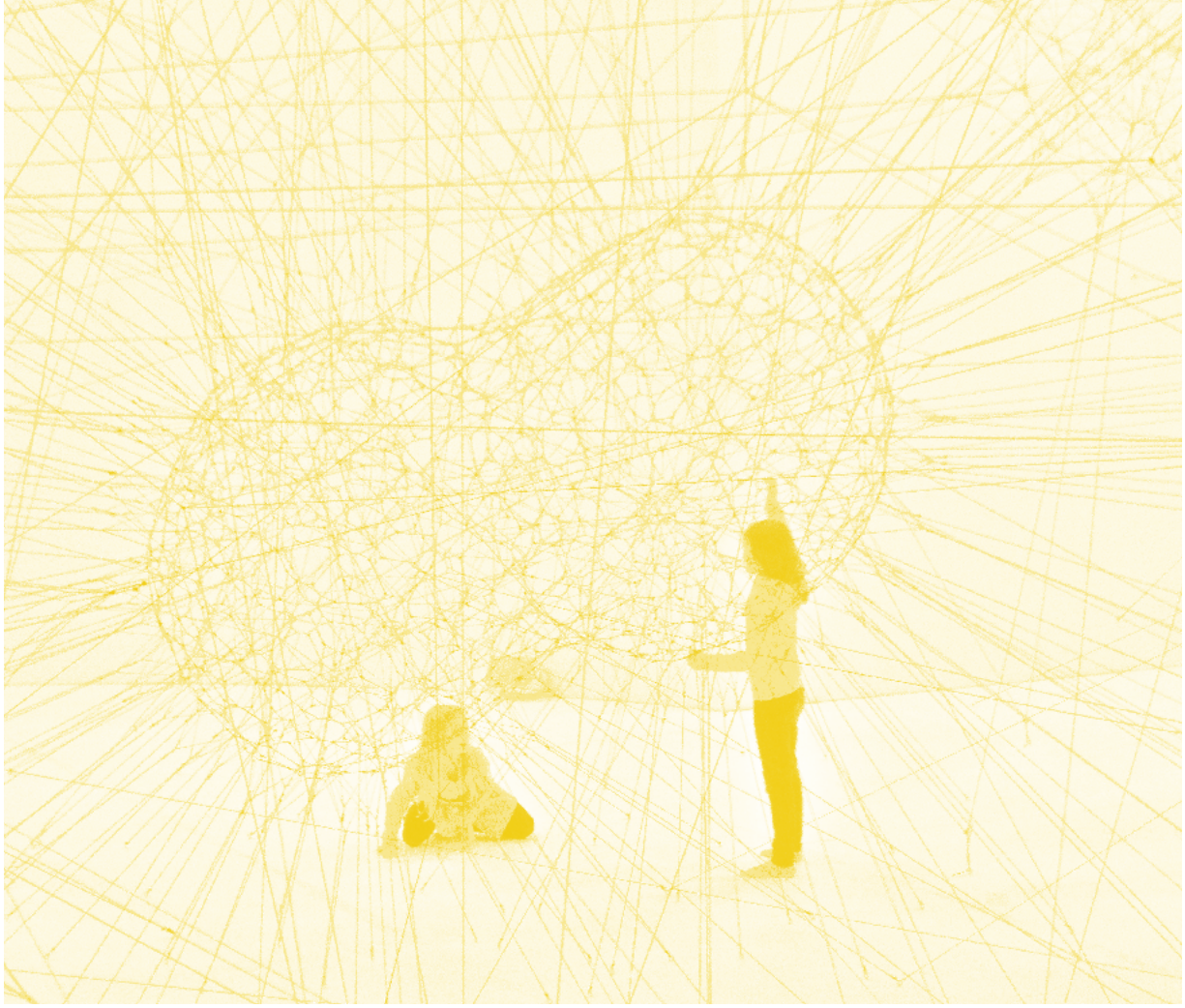
Guiding questions

The discussion paper is guided by the following broad questions:

- What are the inter-linkages between the green economy and global agenda on sustainable development?
- How will the twin green and digital transition transform or affect employment, jobs and workers?
- In what ways can labour migration and human mobility, skills development and transfer contribute to the green economy?
- How can green, migration, labour and skills policy initiatives and strategies be developed or leveraged to service the green economy in both EU Member States and partner or third-countries?

These guiding questions point to the direction of skills development/transfer and labour/legal migration as important elements to the green economy in the context of the EU. By exploring existing good examples and lessons learnt, this paper identifies pointers as to how they could be replicated in other countries. After outlining the methodological approach in the next section, the rest of the paper is further organised into six broad sections.

- "What do we know about the Green Economy as a Sustainable Growth Strategy?" explores the ins and outs of the forthcoming transition and examines its relationship with Agenda 2030, labour markets and decent jobs.
- The section "The Importance of Skills Development for the Green Deal" delves on the importance of human capital for the green transition and points to a series of promising practices from around the world.
- In the section "The EU"s Policy Agenda: The European Green Deal, Skills Agenda and the New Pact on Migration and Asylum" the focus shifts from a global perspective to a regional one and explores these three main policy developments in the context of the European Union (EU).
- "Potential Areas to tap into Labour Migration to service the Green Economy" follows with more in-depth analysis of entry points and valuable actors to involve in the transition towards the green economy.
- Gaps and Constraints to Harnessing the potential of Labour Mobility and Migration for the Green Economy explores current shortcomings to framing migration as an enabler of Green Economy targets.
- A Call to Action: Recommendations and Areas for Further Research offers policy makers and practioners working in the international, regional and local levels of governments a list of recommendations for further action. Several areas for further research in this nascent field are outlined as a means of conclusion.



Methodology

This discussion paper is based on a combination of desk reviews and insights drawn from interviews with ICMPD staff working on the interface between migration and the green economy among other topics. The desk review helped to identify and analyse empirical studies, policy documents and project reports on the green economy, labour migration and mobility governance across countries (see, for example, PAGE, 2019). In addition, the skills for green jobs country assessment reports from the International Labour Organization (ILO) and the European Centre for the Development of Vocational Training (CEDEFOP) were also extensively consulted (CEDEFOP, 2019a; ILO, 2019a). The ILO country assessment reports helped to gain insights on the nature and progress of the transition to green economy across the globe and availability of skills for green jobs, as well as the diverse country-specific initiatives and policy programmes on the green economy.

The paper has also benefitted from the discussions held during the High-Level Panel **"Human Capital and Mobility at the Service of the Green Economy"** that was organised by the ICMPD's MIgration EU eXpertise (MIEUX+) Initiative during the 2021 edition of the European Development Days (EDDs) event. The complementary insights drawn from the High-Level Panel allowed for better appreciation of the links between migration, digital transformation and the green economy as well as highlighting ongoing green projects in different countries, migration and diaspora, digital and technical skills development and the green economy.

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1. What do we know about the Green Economy as a Sustainable Growth Strategy?

'Green economy' primarily translates as a pathway to boost employment and drive prosperity for all through efficient resource use, environmental sustainability, fair and green growth (World Bank, 2012; Loisea et al., 2016; GEC, 2020). It presents a complementary growth strategy to enhancing sustainable development, poverty reduction and inclusive growth. Green growth, in this sense, promotes "economic growth and development, whilst ensuring that the natural assets continue to provide the resources and the environmental services on which our well-being relies" (OECD, 2011, p.4). Moreover, in the context of the global COVID-19 pandemic, there is renewed hope in the green economy as the pathway for national economies to recover from the negative impacts of the pandemic and to build back better and resilient societies for the future. As such, the transition to the green economy is expected to foster environmental sustainability, as well as to contribute to poverty eradication, sustained and inclusive economic growth, and to provide opportunities for innovation, employment, decent work and improvement in the wellbeing of populations (UNGA, 2012).

Despite the traction that the green economy has garnered as a tool to achieving sustainable development, there are also reservations that the shift to green economy may not necessarily guarantee or translate into positive outcomes as it is being widely envisioned. This is in view of the fact that promoting environmental protection and reducing natural capital depletion would come with significant trade-offs relative to conventional growth pathways (Hallegate et al., 2012). Besides challenges of market imperfections, lack of appropriate and ineffective policies, poor implementation or uptake of policies which tend to constrain the shift to green economy (World Bank, 2012), the argument is also that green growth could actually have negative consequences for especially the poor who often depend much on the natural environment and resources for their sustenance. This may manifest in instances of environmental pricing and regulation as a green growth strategy. In this light, the negative effect could be on the welfare of the poor who may not have adequate financial capital to service charges on natural resources or shift to more environmentally-friendly but expensive energy/resources for production (Dercon, 2014).

In the following section, the "highs and lows" of the transition towards the Green Economy are analysed from the point of view of its relationship with the Sustainable Development Agenda and its effect on labour markets and workforce.

1.1 Green Economy in the Context of the Global Sustainable Development Agenda

The principles of the green economy and expected positive spill-overs are inherent in the 2030 Sustainable Development Agenda. Specifically, the vision of reducing inequalities, poverty eradication, just and inclusive growth directly converge with SDG 10, which details the need to reduce global inequality in ensuring that no one is left behind in achieving sustainable development. Likewise, SDG 8 focuses on promoting inclusive and sustainable economic growth, employment opportunities and decent jobs for all. It aims to promote economic security and drastically reduce gaping inequalities in especially developing countries. Also, SDG 8 clarifies the need to decouple economic production from environmental depletion to facilitate sustained job creation, employment opportunities and improved livelihoods. Decoupling would thus entail pursuing a path of economic development that will ensure environmental protection, sustainable use of terrestrial ecosystems, combat desertification, climate change mitigation, restore and halt land degradation and biodiversity loss as readily captured under SDG 15 and 13.

So far, some countries have made significant strides in committing to environmental sustainability as part of national development strategies (see Box 1). This has contributed to the emergence of several initiatives to support the transition to green economy and creation of green jobs in the different sectors of the economy. Several countries, including the United States of America, South Korea ("Korean New Deal 2.0), China, Rwanda, Ireland, Germany, France, Bangladesh (Grameen Shakti Programme), Brazil as well as regional blocks such as the European Union have already initiated green plans and other initiatives that have yielded positive outcomes for both environmental sustainability and job creation (PAGE, 2019, p.78; Lee and Woo, 2020; MOEF, 2021).

BOX 1: GREEN GROWTH AND NATIONAL DEVELOPMENT STRATEGIES

National Green Growth and Climate Resilience Strategy (GGCRS), Rwanda

Over the years, Rwanda has made considerable economic progress as one of the fastest growing economies in the world, with significant improvements in socio-economic and development indicators (Republic of Rwanda, 2011). Despite the relative progress, the country is still faced with climate change impacts on agricultural production, coffee and tea export, as well as hydro-electric power generation. Population growth is also high (2.8%), with the population projected to increase to 26 million by 2050.

The government has chosen a climate resilience and low carbon development pathway in promoting green and inclusive sustainable development in Rwanda. The development of Vision 2050 along this development path is to make Rwanda a climate resilient and low-carbon economy by 2050 (Republic of Rwanda, 2020). The goal is to make Rwanda food secure, eradicate poverty, achieve energy security and have low unemployment rates, and a strong services sector, which will make the country self-sufficient on basic necessities.

To this end, the Strategic Framework for Rwanda's National Strategy on Climate Change and Low Carbon Development has outlined several guidelines and programmes of action across the different sectors. Following the establishment of the Rwanda Green Fund (FONERWA) in 2012 to serve as driver of green growth in Rwanda, more than USD 100 million have been mobilised to support the green growth path. Technical and financial support have been extended to public and private projects (44 green projects) that align with the green economy agenda.

The green investments have resulted in the creation of over 161,552 green jobs, whilst 82,945 households have so far been given direct access to off-grid clean energy (Nkurunziza, 2020; FONERWA, 2021). The Global Green Growth Institute (GGGI) is supporting the green growth agenda in Rwanda through the promotion of sustainable mobility, circular economy with a focus on waste management, and support to green building and construction value chain (GGGI, 2021).

1.2 Transition to Green Economy and Implications for Employment

Despite the global appeal as a sustainable growth strategy, it is important to note that the shift to green economy would trigger transformations across sectors and with varying implications for employment and workers. As already being witnessed in most countries, the shift to low-carbon and circular economy as key features of the green economy would precipitate some structural transformations across sectors and changes in economic activities (Cedefop, 2019a). These transformations would be most evident in the agricultural, energy, digital, automotive and waste management sectors, as they tend to emit carbon and extract more resources for production with direct implications for employment, jobs and skills requirements across the different industries and along value chains. The corresponding transformations and demand for certain skills would also render some jobs redundant (ILO, 2019a, p.114). This would bring enormous challenges to industries, workers and regions who may need to adjust to the green transition.

In **Burkina Faso**, for example, it is projected that the design of green policies to stem the environmental impact of the mining sector would negatively affect the livelihoods and welfare of more than one million people engaged in artisanal gold mining in the country (UNEP, 2014). Similarly, workers in regions that thrive on the coal industry may lose jobs or be resigned to forced retirement. For example, in the Asturias region of northwest **Spain**, it is observed that the closure of coal mines as part of governmental efforts to shift to renewables has affected communities with many workers forced to retire. Aside the psychological effect of having to lose the tradition and pride of having powered the industrialisation drive in **Spain**, many young people are also reportedly leaving the communities due to uncertainty about the future and lack of economic prospects in the region (Campbell, 2021).

In spite of these challenges, the evidence and analyses on the potential of the green economy also suggest the creation of millions of green jobs and gross value addition; and hence, the need for appropriate training, skills and competence to fill these jobs being created. At the global level (in a scenario of global energy sustainability), it is projected that the transition to green economy could create up to 25 million green jobs by 2030. Within the same period, about 7 million jobs would be lost (ILO, 2019a, p.131). This may be a cause for urgency in promoting livelihood sustainability, when it is realised that more than 40 per cent (1.2 billion in 2014) of global employment is concentrated in industries that directly dependent on the natural resource base and ecosystem (ILO, 2018a, p.20). Whilst the general consensus and evidence suggest an overwhelming net green job creation within the green economy, the overall job projections seem to mask the sector-specific impacts and differences across regions.

Besides the sectoral differences, the impact on job losses would also vary greatly across the regional and gender divide. In contrast to Asia, the Pacific, Europe and the Americas, which will witness net job creation of up to millions of green jobs, it is estimated that the Middle East and Africa will respectively record job losses of 300,000 and 350,000 jobs by 2030 (ILO, 2018a, p.42). The net job losses would be especially significant in the fossil-fuel related industry. Aside from the risk of high unemployment rates, the creation of green jobs may not necessarily translate as decent work for people (Van der Ree, 2019). Furthermore, the loss of jobs would affect incomes of workers and families. In this regard, instituting the necessary protection mechanisms, reskilling and upskilling would be vital to helping workers find jobs or maintain some level of income security in order to stem the potential increase in poverty and inequality. This aspect is further discussed in section two.

1.2.1 Sectoral Impact and Migration

The green economy-induced sectoral changes will result in specific skills demand and with implications for workers at the different skill levels (OECD, 2017a, p.5). These changes will be more visible across the renewable energy, environmental goods and services (including water and waste management), construction and building services, manufacturing, agriculture and forestry, transportation services, tourism and extractive industries (ILO, 2019a, p.114 - 115).

THE CASE OF THE RENEWABLE ENERGY SECTOR

In the renewable energy sector, for example, the shift to green sources like solar, wind or hydro-power will see changes in technology and corresponding demand for both medium- and high-skilled green occupations like solar panel installers, turbine technicians, engineers, managers and system designers (ibid.).

Table 1 Sectors Most Affected by the Transition to Sustainability in the Energy Sector by 2030

Industries to set witness highest job demand growth (absolute)	+
Sector	Jobs (millions)
Construction	**6,5**
Manufacture of electrical machinery & apparatus	**2,5**
Mining of copper ores & concentrates	**1,2**
Electricity production from hydropower	**0,8**
Cultivation of vegetables, fruit, nuts	**0,8**
Production of electricity from solar photovoltaics	**0,8**
Retail trade (except for motor vehicles & motorcycles), repair of personal & household goods/items	**0,7**

Industries to set witness highest job demand decline (absolute)	−
Sector	Jobs (millions)
Petroleum refinery	**-1,6**
Extraction of crude petroleum & services related to crude oil extraction (excluding surveying)	**-1,4**
Production of electricity from coal	**-0,8**
Mining of coal & lignite, peat extraction	**-0,7**
Private households with employed persons	**-0,5**
Manufacture of gas, distribution of gaseous fuels through mains	**-0,3**
Extraction of natural gas & services related to natural gas extraction (excluding surveying)	**-0,2**

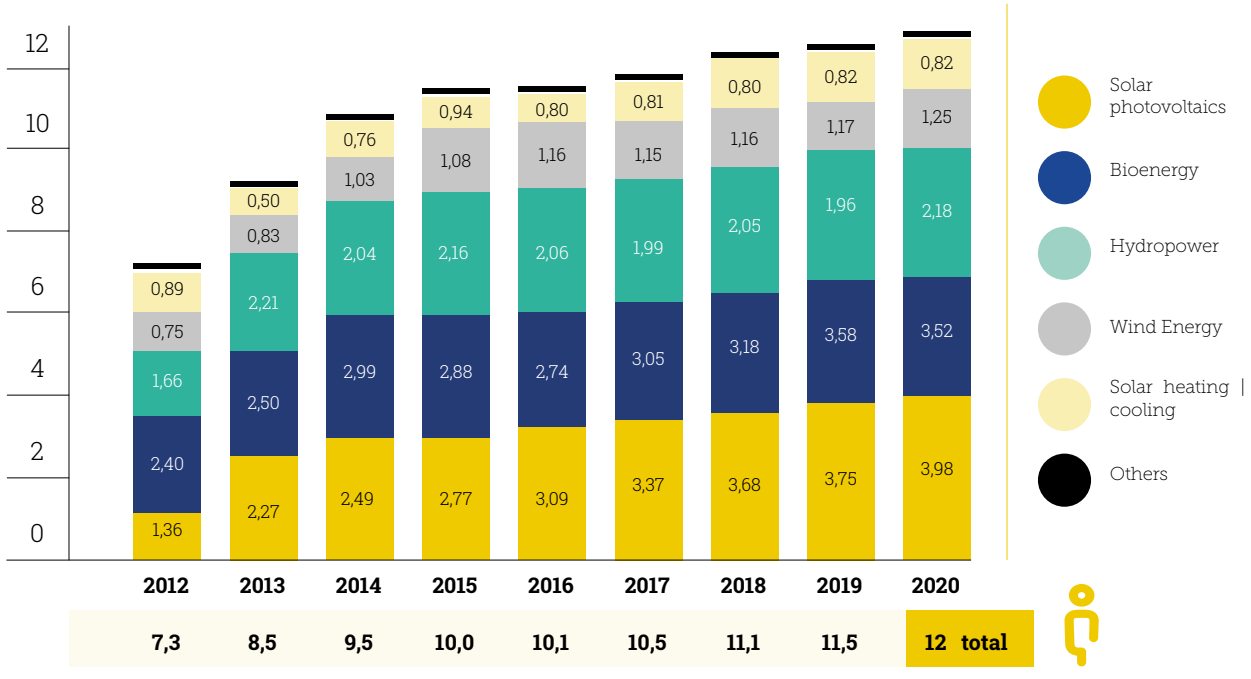
Table 1 Sectors Most Affected by the Transition to Sustainability in the Energy Sector by 2030

Industries to set witness highest job demand growth (%)		Industries to set witness highest job demand decline (%)	
Sector	Jobs (%)	Sector	Jobs (millions)
Production of electricity from solar thermal energy	**3,0**	Production of electricity by coal	**-0,19**
Production of electricity from geothermal energy	**0,4**	Extraction of crude petroleum & services related to crude oil extraction (excluding surveying)	**-0,11**
Production of electricity from win	**0,4**	Extraction of liquefaction, & regasification of other petroleum & gaseous materials	**-0,11**
Production of electricity from nuclear energy	**0,3**	Petroleum refinery	**-0,08**
Production of electricity from biomass &waste	**0,3**	Manufacture of gas, distribution of gaseous fuels through mains	**-0,05**
Production of electricity from solar photovoltaics	**0,3**	Mining of coal, lignite, peat extraction	**-0,03**
Production of electricity from hydropower	**0,2**	Extraction of natural gas & servicesrelated to natural gas extraction (excluding surveying)	**-0,03**

Source: Extracted from ILO calculations (see ILO, 2018a, p.44); *Percentage difference in employment based on the International Energy Agency's (IEA) country specific energy sustainability scenario that limits global warming to 2°C & business-as-usual (6°C) by 2030 (see ILO, 2018a, p.40-44; ILO, 2019a, p.129).

As shown in Table 1, the transition to energy sustainability scenario will affect the energy sector and also see some changes in demand for certain skills and overall employment in countries (ILO, 2019a, p.26).

Table 2 Global Renewable Energy Employment by Industry (2012-2020)



Source: IRENA and ILO (2021, p.11)

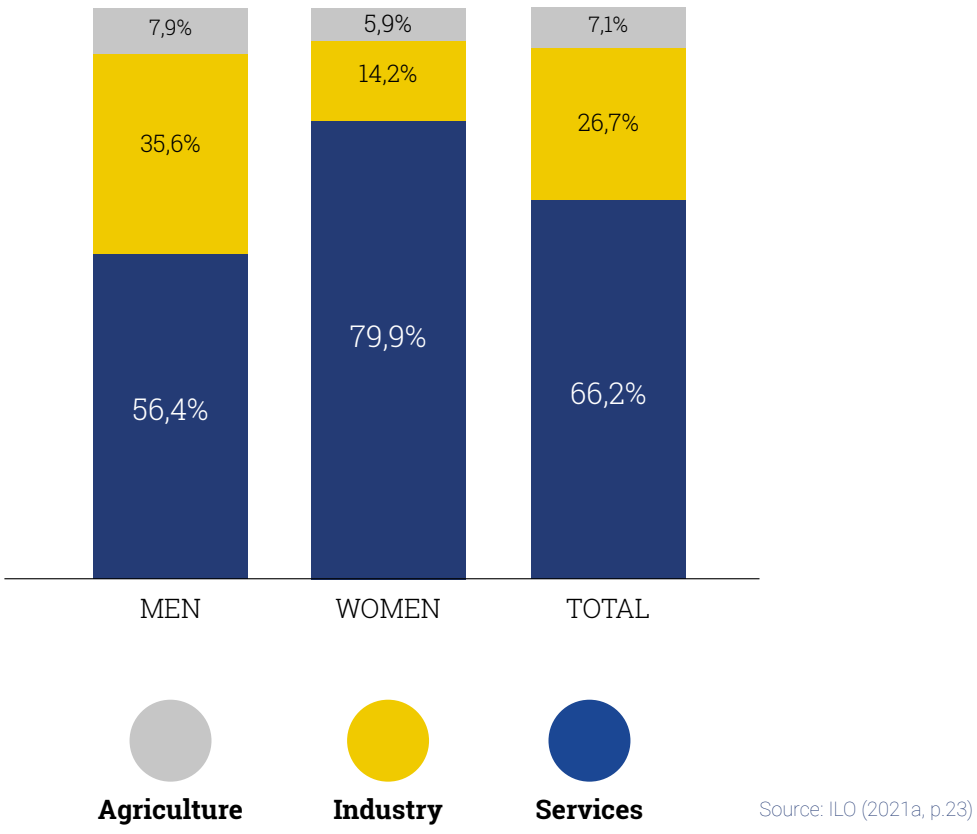
As shown in Table 2, for example, the International Renewable Energy Agency (IRENA) and ILO (2021) review of green jobs in the renewable energy sector recorded a significant growth in the creation of green jobs in the period between 2012 and 2020 with annual increases of at least half a million with a total of 12 million by the end of 2020 (IRENA and ILO, 2021, p.11). Despite the impact of the COVID-19 pandemic on demand for biofuels and sales of solar photovoltaic (PV) equipment and related changes in policy and technology, these industries still recorded significant levels of employment (see, IRENA and ILO, 2021, p.12-17). Besides these aforementioned industries, the hydropower and wind energy industries also emerged as employing more workers worldwide.

In the EU, similar observations have also been made of the energy sector (management of energy resources) witnessing a marked growth in green jobs since 2000 (European Commission, 2020c; Eurostat, 2021). Recent estimates within the EU-27 puts total employment in the renewable energy sector as 1.3 million jobs as of the end of 2020 (see IRENA and ILO, 2021, p.35).

What about migrant workers?

Whilst the expected transformations in the different sectors may see the creation of many green and decent jobs, the changes may not only result in demand for specific jobs, but also have implications for migrant workers. This is in view of the fact that most of the aforementioned key sectors, which would be impacted by the green transition, depend heavily on this group. According to ILO, international migrant workers accounted for 4.9 per cent of the global labour force (3.488 billion) in 2019 (ILO, 2021a, p.11) with a concentration of migrant workers in the services, industry and agriculture sectors.

Table 3: International Migrant Workers by Category of Economic Activity (2019)



Source: ILO (2021a, p.23)

As illustrated in Table 3, the significant proportion of migrant workers (66.2%) are engaged in the services sector, which includes trade, transportation, accommodation and food, and business and administrative services, public administration, community, social and other services and activities – including waste management. Industry, which is the second highest sector with a concentration of international migrant workers, includes manufacturing, construction, mining and quarrying, electricity, gas and water supply (ibid.). Moreover, the agricultural sector and related industries in many countries also employ a significant chunk of migrant workers globally. Considering that these critical sectors thrive on the labour supply of migrant workers, what this means is that migration will be key to the sustenance of these sectors in the wake of the expected transformations that would be reeled by the green transition. In other words, the flow of migrants and their role in providing the much-needed labour in these critical sectors would be vital to enhancing the shift to greater sustainability. These figures shed light on the enormous potential of migrant workers and migration in contributing to the green transition across countries if harnessed with the right policies.

1.2.2 Decent Jobs

The ILO (2016b) conceptualises green jobs as jobs that are decent and help to promote and maintain environmental health, irrespective of whether they are in the manufacturing, construction and green sectors. Decent jobs in this light will encompass green job opportunities, which allow for freedom at the work place, promote inclusion and fair income for workers, ensure security, environmental and social protection, as well as promote the general wellbeing of workers and their families (ILO, 2015a; 2015b).

Nevertheless, jobs within the circular economy, for example, entail recycling activities or recovery of materials which mostly pose significant risks to both human and environmental health (Feldt et al., 2014; Gregson et al., 2016). In the Agbogbloshie area of **Ghana**, for example, the recycling of e-waste through the burning and retrieval of materials from old electronics has continued to affect the environment and pose severe health risks to workers. Besides the low earnings, the potential for workers to be incapacitated due to ill health or governmental regulations to tackle environmental pollution could lead to loss of livelihoods and impoverishment for many families (Kyere et al., 2016; Yang et al., 2020).

BOX 2: TARGETING VULNERABLE GROUPS TO PROMOTE DECENT WORK, JUST AND INCLUSIVE GROWTH

Senegal's National Strategy for the Promotion of Green Jobs (SNEV)

The SNEV Strategy (2015-2020) was a government initiative to drive green and sustainable job creation across different sectors with a focus on youth and women in Senegal. It provides the legislative, institutional and regulatory framework to promote a sustainable and resilient economy in Senegal. Through the Programme for the Creation of Green Jobs Opportunities (PACEV), the SNEV Strategy had initially targeted the creation of 5,000 green jobs by 2022. But by mid-2019, over 2,000 green jobs were created for youth and women (ILO, 2019b). The Strategy has supported skills development and training, and instituted appropriate mechanisms to facilitate inclusive growth, poverty reduction and sustainable development in the country. Amongst other initiatives like the distribution and maintenance of mobile kiosks with solar panels, the SNEV Strategy has provided skills training and capacity building for actors, with a specific focus on youth and vulnerable groups like women and poor households. In view of the considerable impact that the SNEV Strategy has had in Senegal, it is being adopted as a good frame of reference by countries like Burkina Faso and Ghana in guiding efforts at promoting green jobs and sustainable development (Future Policy, 2021).

Applying a gender dimension

At the national level, some governments have integrated labour dimensions and initiated green job programmes that have tended to promote and build the capacities of certain groups, especially women and other vulnerable groups (Future Policy, 2021). Nonetheless, given that males tend to dominate mid-skill occupations, the potential for an increase in mid-skill jobs would mean that more males are most likely to acquire the necessary skills to match the skills requirement of the green and circular economy. Consequently, in both energy sustainability and circular economy scenarios (2030), more men would likely be absorbed by green jobs relative to women, thereby exacerbating existing gender disparities or inequalities in the jobs sector (ILO, 2019a, p.131, 142; European Commission, 2021b, p.20; IRENA and ILO, 2021, p.18-20).

It is therefore important that conscious efforts be made to address challenges and needs of different population target groups and apply a gender dimension to policymaking. As shown in Senegal (see Box 2), the lesson that could be drawn from the positive impact of the SNEV Strategy suggests that it is important and equally beneficial to always consider the negative effects of the green economy on employment, societies and wellbeing.

What this means is that a transition to green economy, without recourse to addressing the negative implications for employment and decent work, could undermine the potential benefits of green jobs, inclusive growth and sustainable development. Hence, making provisions to ensure a gender balance and supporting vulnerable groups, including migrants would thus be key to ensuring a just and inclusive green transition for sustainable development and growth. This would invariably also require putting in place the appropriate policy and legal frameworks, promoting consensus building through social dialogue between stakeholders, appropriate education and training, as well as skills development to serve the green and circular economy (ILO, 2015b; OECD, 2017a, p.131). To this end, skills training and development remains an important element in facilitating an integrated and socially responsible transition to green economy and is the central focus of section two.

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2. The Importance of Skills Development for the transition to the Green Economy

In general, four main factors have been identified as driving skills change and the demand for green skills (ILO, 2018a) (ILO, 2019a, p.49; Van der Ree, 2019, p.259). These include ongoing environmental change; policy and regulation; new green technologies and innovations; and emerging green markets. With the creation of new green jobs, the associated development of new technologies and emergence of new industries and digitalisation would require the right skills to match the changes (European Commission, 2020a). Some of the existing skills may not necessarily change, but that the transition to green economy may introduce new ways of production, lead to digitalisation and emergence of new work tasks. Adapting also to the growing market for green products would mean having the right skills and competencies to fill greens jobs and to meet the growing demand. This may require the reskilling or upskilling of workers, within countries or abroad, in order to have the right skills match to work effectively.

Skills' is a complex and multi-dimensional concept, with several proxies often used to determine the skills levels of workers and labour markets. As a result, it is difficult to adequately conceptualise and measure the concept of 'skills'. The OECD (2017c, p.14) broadly conceives of 'skills' as encompassing the more "generic cognitive and non-cognitive (e.g. information-processing skills, teamwork, self-organisation) as well as skills that are specific to a particular job, occupation or sector (e.g. accounting or hair colouring)." Green skills will thus refer to the technical skills, but also knowledge, abilities, values and attitudes, which are needed to enhance the efficient use of resources and sustainable development (see Arthur, 2021).

However, global assessment of skills needs for the green economy conducted by the ILO and Cedefop in 32 countries suggests significant gaps and shortages of skills for green jobs (Cedefop, 2019p.36; ILO, 2019a). In particular, the lack of technical and core skills, and skills gaps at the high skill levels, relative to low skills, tend to make it difficult to fill important vacancies such as technicians, engineers, and solar/photovoltaic(PV) panel installers, created by green jobs (ILO, 2018c, p.18-24; Cedefop, 2019a, p.69; ILO, 2019a, p.28). As identified in **Spain** (see Table 4) and **Bangladesh** (see Box 3 and ILO, 2019a, p.121), green skills gaps and shortages can be identified across the sectors including agriculture, renewable energy/power sector, waste management, as well as environmental management and services sectors.

Table 4 Green Occupations and Skills Needs in Spain (2017)

Sector/Occupation	Skills Gaps Identified
Forest & environment agents	Prevention of forest fires; topography; use of compass; driving of vehicles
Forest fire workers	Use of specific radio networks (Tetrapol)
Qualified workers in forestry & natural environment activities	Occupational risk prevention, pruning, fabrication of biomass, natural environment, use of chainsaw
Prevention of labour & environment risks agents	Law, new chemical substances, nanotechnology
Waste classification workers	Differentiation of types of waste & treatment for each type of waste. In the future training on new regulations, new materials & new waste management systems can be needed
Environmental & forest technician	Cost and process analysis of forest exploitation, forest certification (PEFC and FSC), forestry-related legislation, management and planning methodologies
Power plants technicians	Electric cogeneration in small power plants; wind turbines
Electricity technicians	Renewable energy; energy efficiency; electric and hybrid vehicles; LED lighting

Source: Cedefop (2018a, p.15)

Despite the challenges, the corresponding policy and strategic investment for skills development or capacity building to address skills gaps for the green transition have lagged greatly across the different sectors and countries (GETI, 2019). The situation is especially dire in low-income countries (LICs) because of the inability to effectively anticipate skills gaps, due to poorly developed monitoring systems. The compounding lack of investment and training opportunities, with specific emphasis on Technical and Vocational Education and Training (TVET) in these countries or abroad for skills development, have tended to undermine the potential to take advantage of the benefits from green projects and jobs often created (see Box 3).

BOX 3: SKILLS SHORTAGES FOR GREEN JOBS

Skills shortages for renewable energy green jobs in Bangladesh

Bangladesh has identified renewable solar energy as a viable alternative to addressing its energy challenges and to stimulate the creation of green jobs for improved livelihoods (ILO, 2018k). This has seen an increase in the installation of small Solar Home Systems (SHS) from 25,000 to nearly 6 million since 2003 (Khasru, 2020). The increase in installation and demand has resulted in the creation of direct green jobs – increasing from 60,000 in 2011 to over 140,000 in 2016 (IRENA, 2016). The number of green jobs relating to installation, panel assembly, operations and maintenance are projected to increase steadily with an average installation of 80,000 units per month. Conservative estimates suggest that there over 200 green entrepreneurs and nearly 28,000 solar engineers and technicians engaged in the sector.

Despite suggestions of a growing workforce of solar energy technicians, the expansion of SHS over the years has translated into growth and a high demand for technical skills to fill the green jobs that have been created. The main skills shortages that have been identified for the renewable (solar) energy sector include the lack of solar energy installation managers, solar photovoltaic installers and technicians.

2.1 Promising practices from around the world

However, there are also a number of positive examples. **Guyana**, **Rwanda**, **Zambia** and other actors have integrated skills components into national environmental policies/strategies and labour mobility programmes[2].

In **Tajikistan** the 'Sustainable Energy for Tajikistan – Integrated Rural Development' project focuses on developing renewable energy and facilitating integrated rural development. As part of the project, an educational module that focuses on facilitating training on construction and maintenance of hydroelectric power stations has been developed and included in the curricula of the Technological University of Tajikistan and Energy Institute (Kurgan-Tube) (ILO, 2018d, p.20), training of up 100 students annually.

The relevance of skills is also reflected in the ongoing revision of educational curricula to include components on awareness raising on issues of environmental sustainability, whilst TVET has become a topical agenda for national governments and actors. For example, the Philippines National Development Plan (2017-2022) has underscored the need for TVET programmes to provide quality training and certification and made provisions for the integration of green issues into the curriculum and training system (NEDA, 2017). Furthermore, the National Green Jobs Human Resource Development Plan being developed in the Philippines has integrated the Just Transition Framework to include measures on education and skills development, labour market interventions, social protection, enterprise development, social dialogue, policy coherence and financing.

Barbados, **Costa Rica**, **France**, **Estonia**, **Ireland**, and **Mauritius** have generally been proactive in developing initiatives to enhance anticipation of skills needs, skills training and development for green jobs (Cedefop, 2017a; 2017b; ILO, 2018f, p.14-17; ILO, 2018g, p.21; ILO, 2018i, p.32; ILO, 2019a, p.34).

Despite the relative progress in recognising and integrating issues of green skills monitoring, anticipation and training into national policies, programmes and strategies (Republic of the Philippines, 2016; ILO, 2018d; DOE, 2019), the corresponding measures to address skills gaps for green jobs are often missing in active labour market and environmental policies (ILO, 2013; Gençsü et al., 2020). Even with skills that workers may acquire through training, they would normally still need to undergo some validation, certification or recognition in some countries or sectors to enable their employability. This is especially the case for international migrant workers.

Moreover, existing initiatives on skills development across countries have also markedly been sectoral or within the context of projects and with different actors (Calvo and Trejos, 2014; ILO, 2015d). This is, for example, evident in **Barbados** where there is an apparent strong commitment across different stakeholders in promoting the transition to green economy. Yet, there are no specific national skills development policies focused on skills

[2]see, for example, (E)Co-development for Innovation and Employment in Green and Circular Economy between Andalusia and Morocco (MOVE_GREEN) project between Andalusia (Spain) and Morocco (Box 7).

development for green jobs (ILO, 2018g) or institutions to facilitate skills training in the different workplaces. Despite these gaps at the national level, the Barbados National Energy Policy 2017 – 2037 (final draft) specifically makes provision for human resource and capacity development by stressing the need for skills development and essential knowledge for the energy sector (ILO, 2018g, p.19).

In the **Philippines**, on the other hand, the government has been pragmatic in developing several initiatives to facilitate sustainable economic growth and development through green policies and green jobs. As elaborated in Box 4, the Philippine Green Jobs Act (GJA) of 2016 (Republic Act No. 10771) has provided the framework to guide and support the creation of green jobs and skills development to fill vacancies in the green economy.

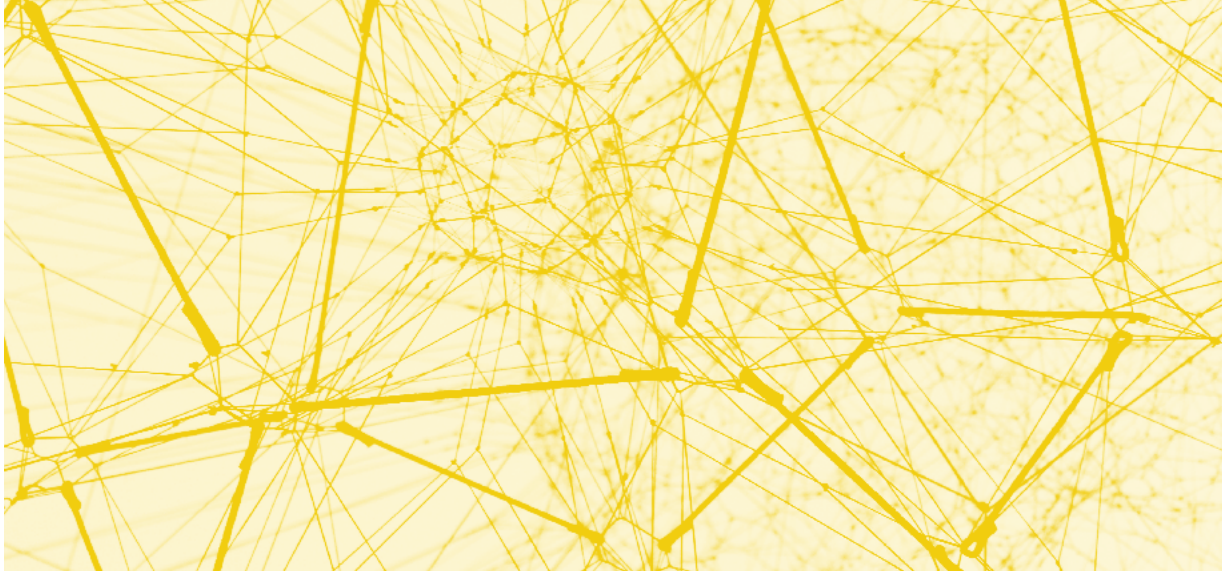
Corresponding Active Labour Market Programmes (ALMPs) like the Training for Work Scholarship Programme (TWSP) or the Emergency Skills Training Programme have also been targeted at the re-training and upgrading of unemployed youth, indigenous groups, retrenched workers and returning migrant workers (ILO, 2018i; 2019a). However, as a high emigrant country, the GJA does not seem to have acknowledged the potential effect of emigration and loss of skilled labour to the green economy. Moreover, no recognition or strategies have been outlined to attract skilled professionals from its diaspora or talent from abroad in facilitating the transition to green economy and to fill green jobs. The two examples of policy gaps in Barbados and the Philippine GJA provide good references that other countries could draw on to guide them when designing future holistic green policy and skills development initiatives which also feature migration and human mobility.

BOX 4: SKILLS DEVELOPMENT AND POLICY

The Philippine Green Jobs Act (GJA) of 2016 (Republic Act No. 10771)

The national economy of the Philippines has witnessed considerable growth since 2010, making it one fastest growing economies in South-east Asia (ILO, 2018i). Despite the economic progress, the country is faced with challenges of extreme poverty, climate change, disasters, population growth and high of levels of unemployment (ILO, 2014). But responding to the myriad of challenges presents an opportunity for the creation of numerous jobs. In this regard, making a shift to low-carbon economy and promoting renewable energy production would generate thousands of green jobs. A shift to green economy will also require the necessary skills to drive the green economy. In advancing this agenda, the Philippine Green Jobs Act was passed in 2016 (Republic of the Philippines, 2016). The Act provides the framework to promote sustainable growth, job creation and a pathway for climate-resilient and sustainable development in the Philippines. It sets out provisions that specifically promotes skills for green jobs and sustainable development. Under Section 2(c), the Act details the need to identify the needed skills, develop training programmes, as well as train and certify workers for jobs to facilitate the sustainable development of the country and transition to green economy.

The Act also tasks the Department of Labour and Employment (DOLE) and the Philippine Statistics Authority (PSA) to maintain a database of green careers, professions and skills. Business enterprises are to be extended incentives (see section 5) to encourage them to offer skills training and sustain green jobs as certified by the climate change commission. In addition to tax and duty free on the import of capital equipment, provisions have been made for enterprises to enjoy a tax rebate on taxable income of up to 50% for expenses on skills training and research development. On skills development, the Climate Change Commission (CCC) works with other agencies to administer standards for assessment and provide training certification for green goods and services, as well as green technologies (ILO, 2018i). In 2016, the green economy contributed PhP 2.7 million of Gross Value Added (GVA) in the Philippines. In terms of employment, a total of 6.9 million Filipinos, constituting 17% of national employment, were engaged in green sectors (ILO, 2019c). Given the annual growth rate demand of 2.8% (representing 1.4 million new positions every year), it is estimated that the green economy will require an additional 3.9 million workers (about another half – 56.2% of what it currently employs - 6.9 million) to fill green jobs (ILO, 2019c).



2.2 The role of skills partnerships and labour migration

As shown in some of the examples cited, mainstreaming migration into green and skills development programmes is even more justified in view of the growing recognition that labour/legal migration presents opportunities that could encourage or facilitate skills transfer and skills development, including for the green economy. Indeed, the Global Skills Partnerships (GSP) model has been categorical in outlining the potential of migration in contributing to development and the sustainability of businesses in both countries of origin and destination countries (ILO, 2018j). In line with objective 18 of the Global Compact for Migration (GCM) on investing in skills development, allowing for mutual recognition of skills, qualification and competences, the GSP provides opportunities for legal migration, skills training and transfer to address skills shortages in critical sectors (including the green economy) in both countries of destination and origin (UNGA, 2019; CGD, 2021a). Thus, promoting effective skills partnerships across countries and sectors can thus facilitate flow of the much-needed green skills to fill gaps, legal migration as well as opportunities for skills training for the green sectors.

Whilst the role of migration has been acknowledged in some green economy policies, it is also a fact that the loss of skilled workers due to migration, can also affect the supply of labour or cause 'brain drain' in a country as observed in the case of **Guyana** (DOE, 2019, p.19). Whereas these reservations may somewhat be valid, it is also true that labour migration can support skills development and inclusive growth through informed and well-designed skills mobility schemes and skills development initiatives (Government of India, 2013; Gençsü et al., 2020; CGD, 2021a). Given this recognition, countries like **Guyana** and **Ghana** have, for example, respectively identified the need to attract skilled workers from abroad and to promote skills in information communication and technology (ICT) as key to facilitating the green transition and sustainable development (ILO, 2018c; DOE, 2019).

In effect, the success of the green transition and associated benefits of sustainable and inclusive growth will greatly depend on strategic policies and programmes on targeted skills development, TVET and mutually beneficial skills mobility schemes. Moving forward, a holistic approach and synergies across sectors and actors (in the private and public sector) will be needed to bring these different policies together in driving green economy. The next section discusses three key recent developments that can aid the green transition for the European Union and partner countries.

3. Three key developments – the European Green Deal, Skills Agenda and the New Pact on Migration and Asylum

In the context of the EU, the European Commission has been unequivocal in emphasising the importance of skills development as central to addressing the demands of the twin green and digital transition in Europe. Besides the launch of the EU Green Deal, the ongoing digital transition, coupled with an ageing population and skills shortages, has also informed the need to attract talent from abroad. At the same time, the need to promote safe, orderly and regular migration also means tapping into the potential of labour mobility in addressing labour and skills shortages in some high-income countries. This has seen the development of several initiatives to promote skills development and skills transfer as part of broader labour migration and economic policies in recent years. The three key policy initiatives identified below can harness the potential of migrants and migration for the transition towards green economy.

3.1 The EU Green Deal and its external dimension

The European Green Deal (2019) is a "new growth strategy" that provides the framework to guide efforts of EU Member States in achieving the goal of zero net greenhouse gas (GHG) emissions by 2050, as well as promoting sustainable and inclusive growth (European Commission, 2019; Claeys et al. 2019). It also serves to enhance the implementation of the 2030 Agenda for Sustainable Development in creating a better and sustainable future for all. The EU recognises that climate change impact and environmental degradation are challenges to sustainability and prosperity for the future. These challenges tend to affect livelihoods, productivity and further exacerbate inequalities across the world. To address these challenges, the EU Green Deal aims to not only make Europe the first climate neutral continent in the world, but also protect and conserve natural capital in transforming the EU into a just and prosperous society (European Commission, 2019, p.19). Economic growth in this regard is to be decoupled from unsustainable resource extraction and set a path of sustainable development for the future.

Green deal diplomacy, focused on convincing and supporting others to take on their share of promoting more sustainable development, is an essential tenet of this new strategy. By

taking the lead, and through diplomacy, trade policy, development support and other external policies, the EU can rally partner countries in advancing this agenda (European Commission, 2019, p.20). In this regard, the 'external dimension' of the EU Green Deal envisages that the EU can use its influence, expertise and financial resources to mobilise its neighbours and partners to join it on this sustainable path (Koch and Keijzer, 2021, p.2). The EU has thus resolved to continue to lead international efforts and wants to build alliances with the like-minded (ibid). This will shape relationships, partnerships, and new areas of focus for the EU and partner countries. Achieving the ambitions of the EU Green Deal will imply designing transformative policies, strategic investments, as well as skills development (pro-active reskilling and upskilling) as catalysts to the green transition (European Commission, 2019, p.19).

3.2 The European Skills Agenda and legal pathways

The European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience was launched in June 2020. It sets out the framework to promote skills development in order to enhance the employability of labour, and to drive innovation and enhance the global competitiveness of EU countries (EU Commission, 2020a). The EU Skills Agenda details the Pact for Skills and calls for joint action amongst all stakeholders in order to improve the quality and relevance of skills, as well as make skills and qualifications more visible and comparable, and to improve skills anticipation and information to enhance employability.

The Agenda acknowledges that the twin green and digital transitions are reshaping the way Europeans live, work and interact; that the demographic change will require EU to draw on all of its talents and diversity and that they will also generate new job opportunities. It is also explicit that the green transition requires investments in developing skills of people to increase the number of professionals who build and master green technologies, including digitalisation, develop green products, services and business models, create innovative nature-based solutions and help minimise the environmental footprint of activities.

Essentially, skills shortage and mismatch within the EU have widely been identified as major challenges to sustainable and inclusive growth (OECD, 2017c; EIB, 2018; Brunello and Wruuck, 2019). The recent Cedefop (2019, p.79-81) skills assessment, for instance, found that firms in **Estonia** were grappling with the lack of skilled labour to match the high demand or skills requirements of green jobs in the agriculture, forestry, construction, transport and energy sectors across the country. Similar observations of skills shortages for green jobs in certain technical areas have also been observed in **Germany** and **Spain**. The concern about skills shortages is not peculiar to only firms in the EU. Indeed, most workers themselves also have reservations in regards to their capabilities for the green transition.

This lack of green skills is compounded by ageing and shrinking population and brain drain, especially in the Southern and Eastern European Member States. These challenges pose significant threats to future supply of labour and sustainability of the EU's global competitiveness. In this light, the strategy to promote skills development and skills transfer through legal migration to specific sectors and regions most in need of skills should be of prime importance to EU policy makers. Against this background, the Skills Agenda acknowledges the need to improve the legal pathways into the EU, enhance skills matching, establish clearer procedures and recognise the competences of migrants (European Commission, 2020a). This should be done in partnership with partner countries in order to promote both development and mobility through increased investments in skills.

Such partnerships are well-placed to attract talent from abroad and to develop skills that would help address the future skilled labour supply needs and maintain the EU's global competitiveness. On the other hand, the mutual benefits that may accrue from supporting skills and legal migration partnerships would help partner countries in their transition to green economy whilst addressing the challenge of irregular migration and high levels of youth unemployment. Consequently, the EU's Pact on Migration and Asylum, presented by the European Commission (European Commission, 2020b) reinforces the concept of partnership with partner countries and proposes a new tool – the EU Talent Partnership, which is a promising avenue to promote skills transfer for the green transition.

3.3 Talent Partnerships under the EU Pact on Migration and Asylum

The New Pact represents the EU's new approach and renewed commitment of its Member States to effective migration management and mutually beneficial partnership with third-countries. Indeed, the Pact builds on and makes clear reference to the Joint Statement of the European Commission and the European Social and Economic Partners on the: "Renewal of the European Partnership for Integration, offering opportunities for refugees to integrate in the European labour market", which highlights 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, 2020d).

It aims to reduce unsafe and irregular migration, promote safe legal migration pathways and provide protection to those in need, and to ensure efficient and fair migration processes. This translated into the announcement of the Talent Partnerships (TPs) in 2020 as one of the six focus areas of the EU's New Pact on Migration and Asylum (see Box 5).

Alongside the Talent Partnerships, the recent approval of the improved EU Blue Card Directive and the revised 2017 European Qualifications Framework[3] further point to the quest to attract talent in addressing the skills needs of the different labour markets, and to facilitate the seamless mobility of skilled labour across EU Member States. These initiatives would be complemented with the development of an EU Talent Pool to facilitate the matching of skilled labour to the skills needs of employers in the EU.

Although there are still ongoing discussions as to operationalisation of the Talent Partnerships in practice, this tool provides good opportunities for mutually beneficial cooperation and for partner countries to develop circular migration schemes, as well as to develop and improve their own skilled human resource base. This possibility could especially be realised by capitalising and building upon the EU Pilot Projects on Legal Migration (Pilot Projects), which are being funded, for instance, under the Migration Partnership Facility (MPF)[4] implemented by ICMPD.

What the Pilot Projects (funded by MPF and the Directorate-General for Migration and Home Affairs - DG HOME) seek to do is to find common grounds for cooperation in the area of labour and legal migration between EU Member States and partner countries with a strong focus on skills development. As such, the current pilot projects have mainly revolved around mobility for higher education, entry-level graduates, internships, and mid-level professionals that have been given the opportunity to acquire new skills both in their countries of origin and in EU. Consequently, learning from the experience of the recently closed and ongoing pilot projects, as well as future projects under the banner Talent Partnerships could be the right avenues or provide the potential for EU Member States and partner countries to drive the skills demands of the green economy.

BOX 5: TALENT PARTNERSHIPS (TPs)

The Talent Partnerships reflect a new approach and practical intent of the EU's ambition to build confidence and promote mutually beneficial partnerships on migration with third countries.

The Partnerships provide the framework and funding support to promote effective migration management and to address the skills needs of the EU through the matching of skills to the labour market and skills needs of the EU and partner countries.

Furthermore, it is envisaged that the partnerships will help address gaps and reduce pressure on the EU labour market due to the shrinking workforce and skills shortages (ibid.).

The Partnerships would seek to combine direct support for mobility schemes for work or training with capacity building in areas such as labour market or skills intelligence, vocational education and training, integration of returning migrants, and diaspora mobilisation.

Greater focus on education would help to support and reinforce investment in local skills. In addition to students and graduates, they will be open to skilled workers and professionals (European Commission, 2021b).

[3] An 8-level learning outcomes-based translation tool designed to facilitate easier understanding and comparison across different national qualification frameworks

[4] https://www.migrationpartnershipfacility.eu/what-we-do/actions-pilot-projects?type=project&area=&country=

4. Potential avenues to tap into labour migration to drive the green economy

As mentioned in section three, the external dimension of the EU Green Deal pushes the European Commission to use diplomacy and strategic engagement to address its global ecological footprint and to draw on its expertise and financial resources in rallying support from its partner countries to achieve these ecological ambitions for all (Koch and Keijzer, 2021, p.2-3). Indeed, at the Second African Union-European Union Foreign Affairs Ministerial Meeting in October 2021 (Kigali, Rwanda), Ministers underscored the potential of the green economy. Hence the call was made for commitment at promoting sustainable investment and to facilitate green and just transition in countries across the regional divide (AU and EU, 2021, p.7). More importantly, the Ministers acknowledged that a strengthened coordination from both sides of the AU and EU was important in collectively achieving the ambitious targets of the Paris agreement (UNFCCC COP26), as well as implementing the outcomes of the UN Biodiversity Conference (CBD COP15) (ibid).

With this vision of strategic engagement and cooperation being further pursued within the framework of the EU Skills Agenda and Talent Partnerships, the possibilities for skills training and development as part of strengthened partnerships could be utilised to further push green perspectives and requirements in both partner countries and EU Member States. The circular mobility and skills development schemes being experimented as part of the ongoing pilot projects are promising schemes that could be upscaled and further replicated to support the green transition.

BOX 6: MOBILITY SCHEMES AND SKILLS DEVELOPMENT FOR THE GREEN ECONOMY

(E)Co-development for Innovation and Employment in Green and Circular Economy between Andalusia and Morocco (MOVE_GREEN) project (September 2021- August 2024)

The Move_Green project is a 36-month circular mobility and skills training scheme, which is being implemented by the Andalusian Municipality Fund for International Solidarity (FAMSI) in cooperation with the Federation of Local Authorities in Northern Morocco and Andalusia (ANMAR) and the Andalusian Association of Renewable Energies (CLANER) (MPF/ICMPD, 2021b). The project is aimed at providing tailored professional training to at least 36 young graduates on areas relating to the renewable energy and green economy. This will equip them with the necessary skills to enable them work in the renewable energy and green economy sector.

Before departing to Spain, the young participating graduates will receive professional training to improve their skills in targeted sectors. In addition to taking Spanish language lessons to facilitate their integration, the young graduates will undergo a 4-month academic and technical-vocational skills training with a focus on the renewable energy and green economy sector. An important aspect of the project relates to the opportunity for practical experience and networking with Andalusian companies and entrepreneurs during the period of stay. Embedded in these training modules are also seminars and awareness raising campaigns to promote circular migration and co-development processes between Andalusia and Morocco. The professional training and practical experience will enhance the employability of the young graduates upon return to Morocco and allow for cross-border cooperation or partnerships between businesses and expansion of the renewable energy and green economy sector in Morocco.

4.1 Pilot Projects on Legal Migration and support to the Talent Partnerships and Green Transition

The mobility schemes currently being piloted, for example, under the Migration Partnership Facility (MPF) have embedded skills training and development components in their areas of focus (see Box 6). The skills training and professional networking components of the schemes provide the opportunity to nurture and tap talent to service the green economy. In particular, the student or young professionals exchange and training programmes and internships provide the opportunity for tailored TVET modules, skills development and networking opportunities that could further be developed to address the green skills needs of the green economy in both partner countries and EU Members States. As exemplified by the Move_Green Project, these kinds of initiatives are needed to drive the green economy. These kinds of green-oriented schemes could be integrated as an important aspect of Talent Partnerships, and expanded in scale and extended to other partner countries.

Aside from the demand for core technical skills, the green economy will also rely extensively on a combination of soft, core and digital skills to drive and adequately match the skills demands of the ongoing twin green and digital transition address. Most especially the green renewable energy, power and extractive sectors will witness significant digitalisation in the production processes. In this regard, skills and legal migration partnerships which involve digital skills training and cooperation with partner countries also present opportunities that could be exploited to push the green economy.

As shown by the PALIM labour mobility cooperation (see Box 7), based on the global skills partnership model, the project seeks to promote safe migration and offer digital skills training to young graduates with the opportunity for job placements in Belgium.

Another notable labour mobility scheme worth mentioning is the 'Digital Explorers' project, which involves skills transfer of professionals to address skills gaps in the information and communication technology (ICT) sector in Lithuania and Nigeria. The project also managed to generate foreign direct investment in Nigeria after a participating business from Lithuania decided to open a Nigerian subsidiary. Next to the work placements, the project has fostered business exchange and networking opportunities between companies in both countries which are proving an important element and "side effect" of the labour mobility projects. This shows that labour mobility projects can be an entry point for broader exchange, innovation, and diversification including in "green" areas. The success of the

BOX 7: LABOUR MOBILITY AND DIGITAL SKILLS DEVELOPMENT AND TRANSFER FOR THE GREEN ECONOMY PALIM (PILOT PROJECT ADDRESSING LABOUR SHORTAGES THROUGH INNOVATIVE LABOUR MIGRATION MODELS, 2019 – 2021)

PALIM (Pilot Project Addressing Labour Shortages through Innovative Labour Migration Models, 2019 – 2021)

The PALIM project is a labour mobility scheme being implemented within the framework of the EU Pilot Projects on Legal Migration (MPF/ICMPD, 2021a). The project aims to promote cooperation between Belgium and Morocco in the effective management of regular migration. Under the auspices of the Belgian Development Agency (Enabel) and in cooperation with public and private employment agencies and employers' federation in both countries, the strategy involves giving interested young Moroccans the opportunity to boost their employability by receiving training and gaining work experience in the ICT sector.

Mostly, interested young professionals are offered technical and soft skills training in Morocco, after which half of those who received the training are supported to find job placements in Morocco. The remaining half also receive coaching to find work in Belgium. PALIM is thus helping to address the labour market needs of the ICT sector in Belgium (in especially the Flanders Region) and at the same time supporting professional skills development of young graduates to enhance their employability in Morocco (MPF/ICMPD, 2021a).

project provide lessons that could inspire the strategic integration of green-oriented skills training and targeted certification and skills recognition into similar or other forthcoming Pilot Projects being considered. Whilst the focus of these initiatives is much more on digital skills development, the scope of partnerships such as these could be broadened by the EU and its partner countries to allow for tailored skills matching for green jobs in the low carbon economy and access to labour markets.

4.2 Diaspora engagement

Diasporas often continue to maintain contact with home countries and communities and tend to engage through three different types of capital: economic, social and human. This engagement can be done individually or through diaspora organisations. They contribute to economic development, including poverty reduction, through financial and social remittances as well as investments. This contribution has been deemed essential to sustainable development. The diaspora also act as 'bridge builders' and 'information brokers' between other actors and home countries (Sinatti and Horst, 2015; ECDPM, EUDiF and MPF, 2021). They tend to build extensive networks which create spaces for collaboration, dialogue and information transfer in relation to their home countries and communities of origin (Aikins and White, 2011; Echeverria-Estrada and Batalova, 2019). Finally, they can act as actors of development through skills transfer and mentorship.

In this light, strategic engagement with diaspora organisations or tapping into skilled diaspora members could be avenues to promote the green transition or address green skills shortages in both partner countries and EU Member States (European Commission 2020b). The progress of the GrEEn project (Box 8), in collaborating with diaspora to support green start-ups and Micro, Small and Medium Enterprises in Ghana could be a good case to model or strategically engage diaspora communities replicating such interventions to drive the economy in partner countries.

BOX 8: DIASPORA ENGAGEMENT SKILLS DEVELOPMENT AND TRANSFER FOR THE GREEN ECONOMY

GrEEn (Boosting Green Employment and Enterprise Opportunities in Ghana) Project

GrEEn is a 4-year project with funding from the EU Trust Fund. It is aimed at supporting the green transition and helping to tackle the root causes of irregular migration by creating resilient local economies, green jobs and development in Ghana (SNV, 2021b). The project is being implemented by Netherlands Development Organisation (SNV) and the United Nations Capital development Fund (UNCDF), in collaboration with the Ministry of Local Government and Rural Development, the Ghanaian diaspora, the International Organization for Migration (IOM), and other relevant agencies and ministries, with a focus on the Ashanti and Western Region of Ghana. The aim is to offer skills training, mentorship and enhancing the entrepreneurship capabilities of young people. Support is also offered to build capacities for MSMEs development and to promote sustainable jobs for youth through mentoring and incubation and accelerated hubs. The project also creates opportunities to match young entrepreneurs for diaspora investment for green MSMEs development and mentoring as part the incubation and accelerated hubs.

Through mentorship and support, for example, green start-ups like 'Fresh Life 360' in the Western Region of Ghana have recorded some improvement and success in blending green practices to catfish farming and developing a business model canvas (BMC) and business plan. A similar remarkable success has been the support to circular economy through the mentorship and support offered to recycling of used tyres to beautiful furniture as a sustainable business opportunity in the Ashanti Region of Ghana. So far, more than 5,000 people, of which the majority are youth, women and migrant returnees, have received training and coaching on entrepreneurship to enhance their employability. More than 100 MSMEs have also have been incubated and accelerated to expand, whilst over 1,500 decent and sustainable jobs have been created by these MSMEs (SNV, 2021b).

[5]E.g. The IOM – Netherlands' Connecting Diaspora for Development (CD4D) programme; AFFORD's (African Foundation for Development) Business Center (ABC) project & GIZ's Returning Experts programme (AFFORD, 2021; CD4D, 2021; GIZ/CIM, 2021).

Putting the emphasis on human capital could be in the form of reskilling or upskilling diaspora members in EU Member States to serve the green labour market needs in both the EU and partner countries. Indeed, skills training and knowledge transfer to and by the diaspora could provide entry points to address skills gap and skills development for the green economy (ECDPM, EUDiF and MPF, 2021). Along diaspora knowledge transfer and business development initiatives, specific green skills needs and technological components can provide the opportunity to integrate and support the green economy, and to address green skills shortages. Drawing on diaspora expertise and knowledge to support green and circular economy development could be done in collaboration with the private sector and civil society organisations.

4.3 Regional mobility and labour migration schemes/ programmes

In regard to the external dimension of the EU migration policy (and the European Green Deal external aspects), existing regional mobility and governance programmes or specific projects are potential avenues to promote labour migration and skills transfer for the green economy. In the context of Africa, for example, the 'Joint Programme on Labour Migration Governance for Development and Integration in Africa' (JLMP) by the AU/ILO/IOM/UN-ECA, and the 'Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa' (THAMM) project funded by DG NEAR, are initiatives that focused in fostering safe, orderly and regular migration. Both programmes also aim to enhance labour migration governance across African countries and at the level of Regional Economic Communities (Practitioners' Network, 2020; ILO, 2021b).

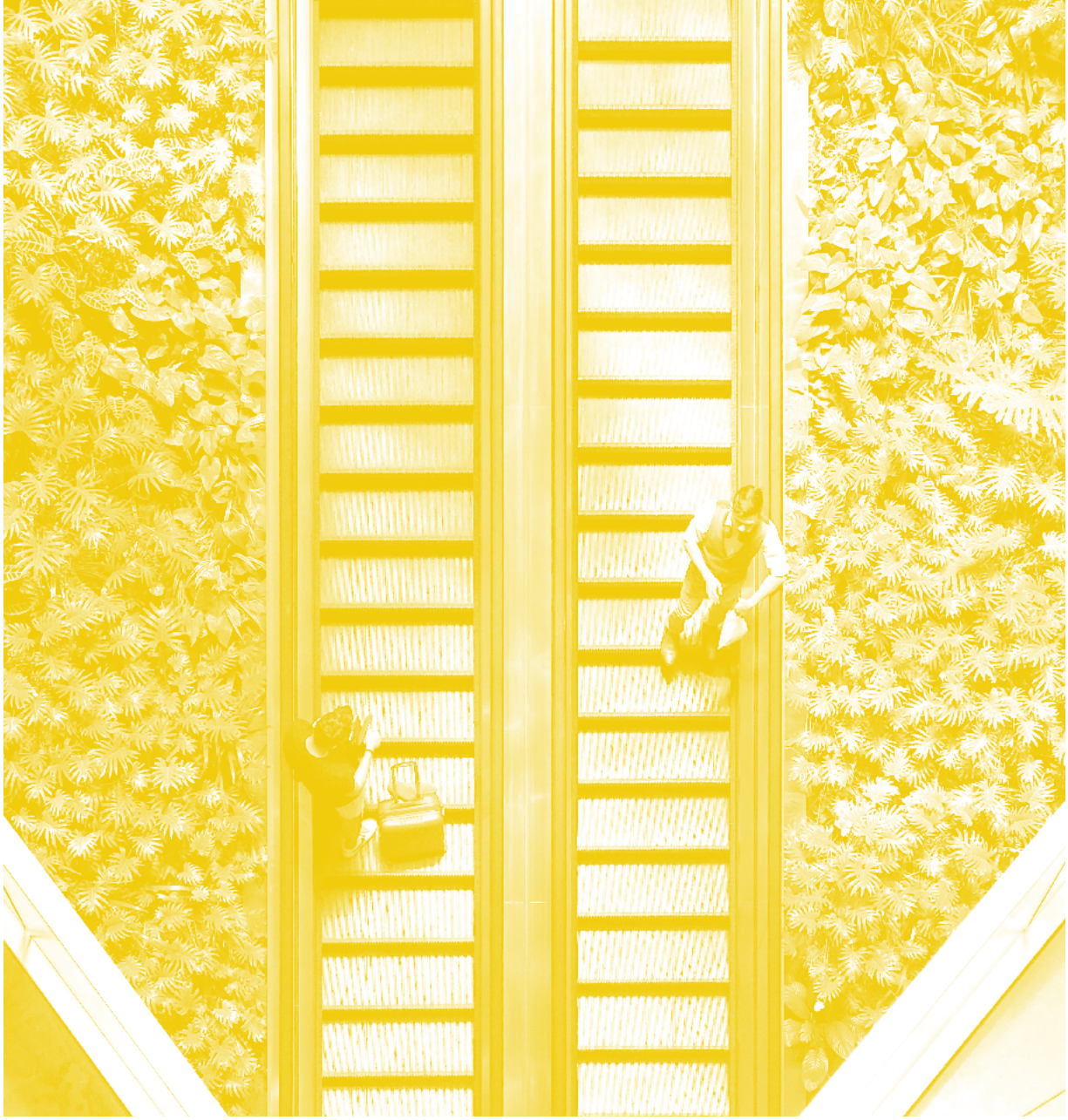
As elaborated in Box 9, for example, the '1 million by 2021 initiative' and modalities of the THAMM project present some opportunities for green skills development for the green economy in both African countries and EU Member States. In similarity to the MPF-funded pilot projects on legal migration, the components of these initiatives could be aligned or considered for support as ongoing development of the Talent Partnerships.

BOX 9: REGIONAL MOBILITY AND LABOUR MIGRATION SCHEMES/PROGRAMMES

The 'Joint Programme on Labour Migration Governance for Development and Integration in Africa' (JLMP)

In addition to promoting free circular mobility regimes in collaboration with regional economic communities (RECs), the JLMP is also advocating the effective application of labour standards for decent work for migrants. The JLMP has also extended support African countries to address skills shortages by promoting skills intelligence, labour migration and labour market data for comparison and matching. The initiative seeks to enhance labour migration training and capacity building of stakeholders to address the skills dimension of labour migration governance (Practitioners' Network, 2020). Through the '1 million by 2021 initiative', the JLMP aims to develop skills and empower up to 1 million young Africans by providing opportunities in the areas of education, employment, entrepreneurship and engagement (4Es) by the close of 2021 (AU, 2019).

Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa' (THAMM) project: THAMM is a sub-regional project being implemented by the GIZ, and focuses on improving labour migration governance and promoting regular labour migration and mobility between Egypt, Morocco and Tunisia, from North Africa to Europe (ILO, 2021b). Under THAMM, participating labour migrants will receive language training and placed on the German labour market, whilst many others will receive vocational training. THAMM also allows for knowledge exchange and skills transfers, development and cooperation at both national and sub-national level. It seeks to support migrants at all levels in order to maximise the positive effects on migration and development through collaboration with national institutions, employment agencies and other relevant institutions (Practitioners' Network, 2020).



In this respect, efforts could be made to mainstream or integrate green perspectives for the mutual benefit of partner countries and EU Member States. Specifically, the 4E pathways (internships and apprenticeships, scholarship opportunities, digital skills development and job centres) designed to achieve the '1 million 2021 initiative', provide possibilities to integrate TVET and tailored green skills development to serve the green transition or at best, equip young people with the right skills to fill green jobs.

4.4 Cities and migration governance regimes

More recently, cities and municipal authorities have also been actively involved in migration governance and integration of migrants in destination countries (Patuzzi, 2020). Alongside these migration governance regimes, there are also national and local government partnerships and sister-city partnerships, which also focus on migration, knowledge exchange and development. Migration management in the context of city councils often involves offering skills training, language courses and apprenticeships as part of initiatives to help migrants integrate. Activities under national and local government partnerships or sister-city initiatives often include circular mobility programmes, technical skills and knowledge exchange (See Box 10). These kinds of partnerships provide opportunities to

stimulate discussions and strategies at supporting the green transition. The knowledge and technical exchange components and development support could be reviewed to integrate components of green skills development or transfer as strategy to address green skills demands of the green economy in the partner countries.

On the other hand, cities generally tend to have a higher concentration of population coupled with economic production and consumption. It is estimated that 2.5 billion people will live in urban areas by 2050 (UNDESA, 2019). Of these, 90 percent of will live in cities across Asia and Africa (ibid.). Whilst the share of foreign-born populations in cities have consistently grown over the years, it is also the case that most migrants, refugees and asylum seekers tend to reside and work in urban centres and cities (Horwood et al., 2020). The increase in urban growth and population density across regions in Asia, Europe, Africa, Caribbean, North and South America, implicitly also signifies that the heavy reliance on fossil fuels and high carbon emission in cities will have adverse implications for climate change mitigation and transition to greater sustainability with the green economy.

Against this background, making cities more sustainable in terms of building more energy efficient and environmentally-friendly infrastructure, carbon-free energy and transport systems will be key to addressing climate change and enhancing the green transition (De-lorme and Merrit, 2021). Already, some cities (e.g. Cape Town, South Africa; Tsévié, Togo) in many parts of the globe have made strides in promoting sustainability and the use of more efficient and clean energy (REN21, 2021 p.138). In Morocco, for example, the government is leading the way to increase power generation from renewable energy by up to 52 percent by 2030 (MEED, 2018; RCREEE, 2022). In Quarzazate, a solar thermal plant has also been built with solar panels expected to cover much of the city of Rabat. The solar thermal plant looks to supply power across the city that will last up to 20 hours a day and to power 1 million homes in Morocco (Javelosa, 2015). Given that the shift to green and clean energy will translate into more green jobs, Morocco will need a large workforce with the requisite green skills and competencies to fill these job vacancies. But with Rabat also serving as a place of destination and transit for both refugees and labour migrants, opportunities could be opened for target-ed green skills training for migrants as a way to drive the ambitious green transition in the renewable energy sector and to integrate migrants into the local labour market in Morocco.

BOX 10: CITIES AND MIGRATION GOVERNANCE REGIMES

The Mediterranean Network for Training Orientation to Regular Migration (MENTOR) II programme

MENTOR II is a pilot project to promote circular migration, being implemented by the municipalities of Milan and Torino in Italy, and in partnership with the Piemonte Job Agency and the migrant association ANOLF Piemonte. In addition to promoting circular migration between Italy and the Maghreb region, the programme is also targeted at offering opportunities for professional growth and development for highly-skilled young Moroccans and Tunisians. MENTOR II also encompasses the mapping of priority areas of focus in Morocco and Tunisia, as well matching of young professionals with companies and opportunities for traineeships (Centro Estero per l'Internazionalizzazione, 2018).

Before departure, the selected persons often undergo technical skills training, Italian language courses and civic education to help them during period of their traineeship in Italy (ICMPD/MPF, 2021c). The networking and opportunities for workplace training allows for acquisition and improvement of both hard and soft skills. Whilst provisions have been made for further mentoring to facilitate the reintegration of trainees upon return, the programme allows for sustainable circular mobility between the country and possibilities to enter the Italian labour market (ibid.).

5. Current Gaps and Constraints to Harnessing the Potential of Labour Mobility and Migration for the Green Economy in the EU and Partner Countries

The EU's recently created tools and policies can support the green transition (e.g. pilot projects and Talent Partnerships). However in spite of existing green-oriented ambitions, objectives and policy initiatives, there is still a limited focus in tailoring legal migration pathways/labour mobility schemes to address the specific skills demand of the green economy. Coordination and policy coherence will be needed to drive these ambitions forward. The EU's Skills Agenda has stressed the need for skills development to promote green skills intelligence, inclusive labour markets, as well as attract talent from abroad and to make better use of migrants' skills. Yet, specific attention to integrating green skills development initiatives, as part of existing or ongoing broader labour migration schemes and mobility partnerships, have relatively been limited in projects with the exception of some notable and promising projects like Move_Green (Andalusia-Morocco, see Box 6) and GrEEn (Ghana, see Box 8),.

When analysing the legal labour mobility initiatives being implemented within the context of the Pilot Projects, it can be observed that the focus seem to be more on highly-skilled, mid-level professionals and graduates, rather than harnessing the potential of low-skilled migrants both in countries of origin and destination to drive the green transition. The implication of this rather skewed focus is that low-skilled migrants, who are mostly engaged in the low income earning circular economy and construction sector, are overlooked as potential beneficiaries and not given the necessary opportunities for reskilling and upskilling to take up green and technical jobs with the green transition or perhaps enable them shift to some specific sectors. Capacity development and knowledge sharing for all levels of public administration, as well as for key actors such as diaspora and the private sector is needed to spot the opportunities and scale up the initial pilot projects and other initiatives that have started.

Even with the launch of the Digital Skills and Jobs Coalition to develop a digital talent pool in Europe, and other initiatives like the European Professional Card and European Qualifications Framework mechanisms, there are still no comprehensive protocols as to how third country nationals including beneficiaries of family reunification, asylum seekers and seasonal workers could receive training and how to access EU labour markets. There are also no outlined modalities or it is not clear as to how employers could draw from the talent pool and how migrant qualifications could be recognised for the green economy (Gençsü et al., 2020; Stefanescu, 2020).

The situation is even more challenging in view of the fact that most EU Member States are guided by their own labour migration and labour market policies, and as well have bilateral labour migration schemes and projects with partner countries (Martin et al., 2015; Castillejo, 2017, Practitioners' Network, 2020; GIZ, 2021). Some of these bilateral labour migration programmes have often tended to prioritise safe labour migration, integration and issues of migration and development, with limited or no hindsight for the consideration of green skills[6]. With the existing bilateral circular mobility schemes or projects that tend to have skills development and capacity building components, the focus has so far been on developing digital skills and skills in the renewable energy sector. There is also limited focus on the circular economy, where there tend to be a concentration of low-skilled migrants (Gregson et al., 2016).

However, the evidence and arguments point to the fact that international migrant workers are often endowed with 'skills mix' including indicators on educational attainment and valuable knowledge drawn from previous jobs, as well as core or soft skills that are key in the discharge of duties at the workplace and for economies to thrive (CGD, 2021b). Hence, a consideration to enhance the capacities or develop green skills for migrant workers at all levels of the labour market, as well as integrate components of green skills training and development into labour mobility schemes or upcoming Pilot Projects and EU Talent Partnerships being planned, would contribute to driving the green economy in both EU Member States and partner countries.

Notwithstanding the observed gaps and challenges, labour mobility schemes and ongoing skills development partnerships could provide the opportunity to adapt or institute targeted measures and policies to fully harness the potential of migration in serving the green transition in both the EU and partner countries. To this end, the recommendations or key entry points to help harness the potential of migration and skills development for the green economy are outlined in the following section.

[6]See, for example, Digital Explorers project, PALIM project, MENTOR II programme

6. A Call to Action: Conclusions and Key Recommendations/ Entry Points to Leverage Labour Migration for the Green Economy

From the discussion, it is evident that skilled workforce is key to the ongoing global shift to the green economy as a pathway to promote just, and inclusive growth, and to address the environmental impact of climate change and environmental degradation in line with the goals of the 2030 Agenda. Given the importance of skills to the green transition, the discussion has also pointed to skills shortages and limited consideration for green skills training and integration of green perspectives into TVET at national levels.

Despite the widespread recognition and ongoing efforts to address these challenges, they have continued to hamper or remain veritable constraints to the green transition. Even in instances where green growth strategies have been developed or integrated into national development plans, there is often an apparent of lack of strategic inclusion of the nexus between the green transition and migration; except in the few instances where green strategies have either acknowledged the loss of (skilled) labour due to migration, or the plan to re-train migrant returnees or the need to attract skilled professionals from abroad (see, ILO, 2018d, 2018i; DOE, 2019).

Amidst the growing shift to greater sustainability, and ongoing global efforts to tackle irregular migration and address skilled labour shortages through legal migration channels, the associated skills and migration policy initiatives present entry points that could further be exploited to serve the green transition at local, national and international levels. The following recommendations are hereby proposed as avenues that could further be considered to tap into the potential of human mobility in the service of the green economy across countries.

National Level

The translation of efforts to address green skills shortages - through improved skills intelligence and targeted training across countries - has mostly been sectoral and with different methodological approaches across different institutional set-ups (ILO, 2015b, p.24-30; ILO, 2018d, p.25-26; ILO, 2019a, p.163-164; Cedefop, 2019a, p.32-36). Moving forward, greater coordination will be needed across institutions to adopt a multi-level/sectoral approach to enhancing green skills intelligence and development at the national level.

Recommendation 1

Adopt a sectoral approach to ensure coordination across institutions and policy coherence in green skills intelligence and development

Policy coherence in mainstreaming targeted green skills training as part of broader skills development strategies and programmes, as well as educational curricula and employment programmes is another essential element. A precondition for this to materialise is to strengthen (green)skills anticipation and monitoring mechanisms, instituting coherent and targeted training for green skills development across sectors and institutions (see ILO, 2021c, p.80-82).

Enhancing green skills anticipation and development could also reflect in the form of technical support by way of capacity building to empower sectors and institutions to be able to develop mechanisms in effectively monitoring and addressing green skills need. By developing synergies across the different sectors and institutions, training programmes could be designed to allow for the reskilling or upskilling of workers or targeted training of the different categories of the workforce in countries (e.g. the "Emplea Verde" and "Emprende

BOX 11: CAPACITY BUILDING AND TRAINING TO DEVELOP GREEN SKILLS EMPLOYED WORKERS

The Emplea Verde programme (Spain)

The Emplea Verde programmeis being implemented under the asupices of the Biodiversity Foundation of the Spain Ministry of Environment and with co-funding by the European Social Fund (ESF) (Cedefop, 2018, p.24). The programme is designed to provide capacity building and training to improve the skills of employed workers for green sector. As part of the training, priority is given to certain categories of workers such as: women, workers of rural and environmentally protected areas, migrants, workers who are over 45 years of age, young persons under 30 years, as well as persons with low educational levels and retraining of workers in declining sectors (Cedefop, 2019, p.43).

Since 2007 provided 1,900 courses in green skills – including diverse environmental skills, sustainability culture, addressing new demands from the labour market and the corresponding promotion of SME internalisation. Within the period of 2007 – 2015, for example, about 60,000 (32% women) across 24 institutions (94% SMEs, 3% big companies & 3% NGOs) were given some training (Cdedefop, 2018, p.24). Besides providing training for the different categories of workers, support is also offered to green entrepreneurs through the "Emprende Verde" (Green Entrepreneurship) programme.

Between 2007 – 2015, this programme was instrumental in contributing to the creation of 3,500 direct job, whilst up to 2,600 green start-ups and business have also been created by way of its co-funding of 270 green projects. So far the Emplea Verde been included ESF funing for the period spanning 2017 – 2023 (ibid). With the allocated budget of EUR 67 million, the target is to suport 50,000 persons and 3,000 companies. The focus is to support blue economy projects and much attention to unemployed persons, as well as social innovation projects and exchanging experiences and knowledge among EU green entrepreneurs.

Verde" (Green Entrepreneurship) programmes in Spain) (see Cedefop, 2018a, p.24 or Box 11). Whilst these initiatives could contribute to developing the right skills and competencies for the green sector, the cross-sectoral capacity building would help to harmonise protocols and methods in terms of identifying and labelling green occupations[7], as well as allow for categorisation, monitoring and data collection across sectors and institutions engaged in undertaking sector-specific skills anticipation and targeted skills training (ILO, 2015b, p.39-47).

At the national level, the observation is that the green transition and the associated transformations will be most profound across key economic sectors such as the (renewable) energy, environmental goods and services (including water and waste management), construction and building services, manufacturing, agriculture and forestry, transportation services, tourism and extractive industries (ILO, 2019a, p.114-115). At the same time, the available evidence also suggests that these sectors tend to employ and mostly thrive on migrant workers (see ILO, 2021a, p.11). As such, adopting a sectoral approach and targeted training would also contribute to further harnessing the skills of migrant workers for the green economy and to leverage their potential as an important group of persons across countries. In this light, redoubling efforts and investing into disaggregated data collection for statistical purposes, in line with Objective 1 of the GCM, would be essential to bringing to light the contribution of migrants who might in fact already be employed in these sectors at a national level.

BOX 12: DEVELOPMENT COOPERATION AND NATIONAL MIGRATION POLICIES

Mauritius Migration and Development Policy

as a small island state, Mauritius has been marked by high rates of internal population movements and emigration. Whilst the national government has identified regional integration as key to increasing its competitiveness, the country is saddled with challenges of skills shortages and brain drain due to the emigration highly-skilled labour (ICMPD – MIEUX, 2017).

As outlined in the 2008 Maurice Ile Durable (MID) project and the Mauritius Vision 2030 document, however, the government's vision is to green all sectors of the economy for green jobs and to make Mauritius a model of sustainable development (Sultan and Harsdoff, 2014; Republic of Mauritius, 2017; 2020). There was thus the need to enhance skills development and availability, and to stem the loss of human capital due to emigration of highly-skilled.

In 2018, the MIEUX programme (funded by DG INTPA) supported the Government of Mauritius in designing its first Migration and Development Policy 2030.

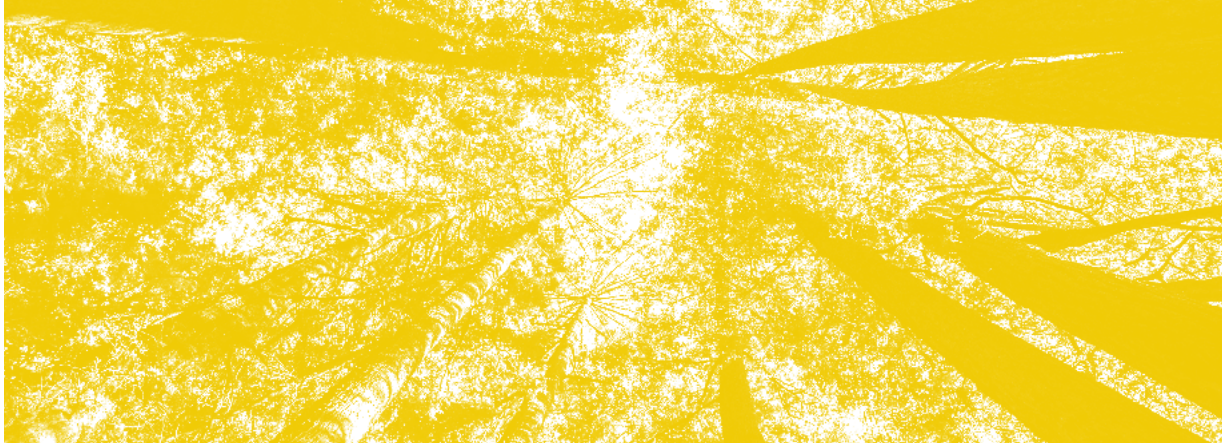
The whole-of-government approach adopted allowed for broad consultations, fact finding mission, training and capacity building on policy cycle, awareness creation, inter-institutional cooperation and with insights from a wide range of both local and international actors.

During the evidence collection phase, it became evident that the existing immigration practices (e.g. quota, permits, visa, etc.) were hindering the recruitment of necessary and qualified manpower from abroad that was in high demand in sectors such as ICT or ocean economy (both contributing to the green transition) and manufacturing, agriculture (sectors to be adapted to the green transition practices). Representatives of the private sector and in-line ministries were pointing to the immigration obstacles when it comes to the recruitment of specialists from abroad and consequently to the impossibility to bring the needed work force in the country. At the same time, the availability of needed skills was scarce on the national labour market due to the mismatch between education and labour policies.

This example demonstrates how important policy and institutional coherence is, also in relation to the inter-play between green transition/growth and other sectoral policies and that little analysis is being conducted on how barriers created by specific policies may hinder the green transition. Consequently, it is to analyse the migration (and development) policies also from the angle of opportunities and barriers to the green transition and human capital development/formation.

Modelled around four pillars of action, the policy process allowed for a strategic vision that aligns with other national development policies like the Vision 2030, complementary and synergies with regional and international actors and policy initiatives, partnership with relevant stakeholder and actors and to cover all facets of migration in the country (ibid.).

[7] e.g. In China, a label for green occupations was included in the "Dictionary of Occupations in China" (first published in 1999) (see, ILO, 2018, p.53-54)



Recommendation 2

Support the mainstreaming of the migration and green economy nexus through international/development cooperation

Global efforts to harness the development potential of migration and to promote effective migration governance have led to the growing commitment to design national migration policies and programmes across countries. These national migration policies provide the framework to guide the actions of national governments and other relevant actors on matters relating to migration and development. Although the inclination and scope of most national migration policies have so far been more focused on migration and development or migration management, the consultative or broad stakeholder engagement (whole-of-government and whole-of-society) that often characterise these national migration policy processes, present good strategies to design inclusive green policies as part of national development plans in the near future. As shown elsewhere in **Ghana** and **Mauritius**, for example, the EU and international organisations like the ICMPD, IOM, ILO, the Department for International Development (DFID), UNDP and civil society organisations[8] have often provided support (technical and financial) to third or partner countries in the design of their national migration policies (Segadlo, 2018; ICMPD-MIEUX, 2017).

With the national migration and development policy process of **Mauritius** (Box 12), the lessons which could be drawn are that development cooperation can create awareness and contribute to the drafting of comprehensive policies and ways to design a holistic approach to dealing with issues of migration for national development. Given this practical example of Mauritius, the opportunity to push green perspectives and enhance green skills transfer could be envisioned in the area of support to national migration policy processes. For instance, the EU Pilot Projects being rolled out and aspects of development cooperation could also be modelled to offer technical support to guide the development of national migration policies to align or ensure policy coherence between migration and green policies. This could help develop green skills locally to fill green jobs. On the other hand, the technical support could be in the form of creating an enabling environment to facilitate skills transfer and mobility by streamlining and simplifying immigration requirements to attract green skills professionals from abroad or tap into the diaspora to support the green economy in partner countries.

[8] e.g. ICMC-International Catholic Migration Commission & AFFORD

Recommendation 3

Green skills training as climate adaptation strategies and to foster sustainable reintegration

In the face of climate and environmental change impact, migration has been one of the many coping or adaptation strategies for affected or vulnerable populations. Yet, in many national climate change adaptation policies and strategies, migration has often been given little attention or perceived as an outcome of mal-adaptation (Jacobson et al., 2019). More recently, scientific and policy discussions have pointed to migration as a potent adaptation strategy to climate change impact that could be facilitated through resettlement and planned relocation (Afifi et al., 2015; Wilkinson et al., Jha et al., 2018; Schraven et al., 2021).

Without recourse to criticisms about the simplistic and narrow framing of migration as adaptation strategy (Sakdapolrak et al., 2016; Vinke et al., 2020), the proposition is to consider green perspectives in the design of national climate policies that look to harness the potential of migration as adaptation to climate impact. In particular, green skills training components could be integrated into climate migration strategies and programmes to enable climate and environmental change-related migrants and displaced persons to take up green and decent jobs. Having the right green skills and competence could facilitate recovery or enhance their resilience, and hence, help to unleash the full potential of migration as adaptation. With return and reintegration also gaining prominence in migration management discussions, green perspectives, skills training and development for decent jobs in the green and blue economy could provide avenues for sustainable reintegration.

Recommendation 4

Enhanced Diaspora Engagement

In the context of diaspora engagement, the recent study on the potential of diaspora in contributing to the effective implementation of the EU Talent Partnerships (ECDPM, EU-DiF and MPF, 2021), has further lent credence to the relevance and important of diaspora as agents development and information brokers between places of destination and home countries. In this regard, there is thus the need to develop and strengthen partnerships with diaspora organisations and to promote effective engagement with diaspora professionals as agents that could drive the green transition through knowledge exchange, green skills transfer and investment in the green sector. Both home governments and international organisations that are actively working with diaspora associations and organisations could utilise existing diaspora engagement initiatives to drive this green agenda and perspectives. Already, the ICMPD has actively taken up this initiative by organising the "Going Green" day as part of Future Forum in June 2021[9].

[9]https://diasporafordevelopment.eu/wp-content/uploads/2021/10/Future-Forum-Report-EN.pdf

As shown in the case of the SNV and UNCDF – led GrEEn project in the Ashanti and Western regions of Ghana, strategic matching and skills incubation, to help the development of MSMEs, create jobs and help the sustainable reintegration of migrant returnees, with the support of diaspora, can be pivotal in enhancing green and inclusive growth in partner countries. Thus, the proposed diaspora partnerships could be modelled in the form of capacity building for diaspora professionals and low skilled migrants through existing diaspora engagement initiatives and the support of international organisations and civil society. This would empower them with skills to take up green jobs or facilitate skills transfer, and matching diaspora with green MSMEs for investment in countries of origin or heritage.

Already, the EU Global Diaspora Facility (EUDiF) provides the platform which could be used as a medium to coordinate and build an up-to-date database of diaspora organisations and professionals. This could provide the base data and profiles to facilitate capacity building on green economy and for identifying talents that could be drawn to support green skills needs. The database would also allow or enhance a robust and reliable labour market needs anticipation, skills matching and training of labour migrants for green jobs and related key economic sectors.

Cooperation at Inter-regional Level

Recommendation 5

Pilot projects on legal and labour migration, and Talent partnerships - integrate green perspectives and skills training as part of ongoing or future mobility and skills partnerships

There are still ongoing deliberations as to how to definitively operationalise the EU Talent Partnerships in practice. However, the existing mobility schemes and traineeships being experimented as part of the Pilot Projects provide an opportunity for reconsideration in pushing and making green skills perspectives much more visible and stronger in terms of the focus areas of cooperation. Given that most EU Members States and partner countries are grappling with the lack of adequate and right skills to contain the rapid transformation in economic sectors and disruptions in labour markets, the principles of the existing skills and labour mobility schemes could be revisited and broadened to include specific initiatives on green skills development or skills transfers.

Alternatively, initiatives on green skills training could be embedded in broader mobility and skills schemes as part of the modalities for cooperation under the upcoming EU Talent Partnerships. A consideration could also be made as part of the EU Talent Partnerships to offer skills training and apprenticeships to low-skilled migrants and opportunities to reskill or upskill both local and migrant workers displaced by the green transition in both partner countries and EU Member States[10]. This would help in ensuring a just and inclusive transition for all and to avoid conflicts with local workers.

[10] for example, in Uganda many of drivers of motorcycle taxis (bodaboda) who were displaced by city bus service and lost jobs have not been given any training. Many of those who lost jobs have become touts or conductors directing passengers to buses at lorry stations (see ILO, 2018a, p.145).

Develop common skills qualification and talent recognition framework at both regional and continental levels

In the context of regional mobility initiatives and dialogues, the proposition is to establish regional mechanisms on skills certification and training. That is, support the development of common and harmonised skills qualification and recognition framework for skills and labour mobility initiatives between the EU Member States and partner countries, as well as at continental and regional levels.

As part of "Agenda 2063", for instance, the African Union (AU) has emphasised the vision and importance of establishing a continental free trade area in promoting sustainable development, poverty reduction, as well as facilitate an integrated, prosperous and peaceful Africa (AU, 2015). In line with this vision, the African Continental Free Trade Area (AfCFTA) was established in 2018 with the objective to "create a single market for goods, services, facilitated by movement of persons in order to deepen the economic integration of the African continent" (AU, 2018a, p.4).

Besides the free movement of goods and services, the AU Migration Policy Framework for Africa and Plan of Action (2018-2030) (AU-MPF) has also advocated for the implementation of continental brain gain strategies that would enhance skills development through international education and work opportunities, diaspora engagement and return to help address skills shortages, as well as regional and continental mobility of skilled professionals (AU, 2018b). In support to promoting regular migration and skills transfer for the green transition, the existing policy initiatives and dialogues at the continental and regional levels[11] should look to harness skills portability and recognition as critical elements to addressing the skills needs of the green transition, as well as reduce youth unemployment in Africa (see, for example, Werquin and Panzica, 2019

On the part of the EU, the EU Skills Agenda and New Green Deal have both emphasised the need to attract talent from abroad and to facilitate access to labour markets as crucial to the green economy and sustainable growth for the future. Nevertheless, skills recognition, access to labour markets and participation still remain challenges (ILO, 2016a, p.146-147). Besides the European Professional Card and European Qualifications Framework mechanisms, which have been designed to help with the skills recognition of labour migrants for the EU labour market, there is also the need to develop common and aligned regional skills qualification and talent recognition frameworks to enhance migrant workers' portability across the regional divide and access to EU Labour markets. Whilst these initiatives could be developed within the framework of the regional mobility dialogues, RECs or Mobility and Talent Partnerships, the components of the ongoing initiatives could be in the form of technical support to integrate TVET training to develop green skills for critical sectors of the green economy and also digital skills as part of a common (inter-)regional or national educational curriculum for partner countries.

[11] Regional Economic Communities

In Africa, the AU Migration Policy Framework for Africa has outlined the need for Member States to "undertake skills gaps analyses and skills forecasting to determine the skills that will be necessary in the short-, medium- and longer-term for the economic development of the regions and support Member States in adapting their education systems and training courses toward qualifications that will be needed across the region (AU, 2018b, p.38). With countries like **Rwanda**, **Kenya**, **Senegal** and **Ghana**, which already have the structures and made some relative progress in the green and digital transition (e.g. silicon savannah, Kenya and ICT sector in **Nigeria**), some expertise or skilled professionals could be drawn from these countries to support other African countries through knowledge exchange and skills transfer, and to fill green jobs. This could be complemented by building institutional capacity to facilitate skills anticipation through research and monitoring, skills training and to build comprehensive national or regional, or even consolidated continental skills database. This would help in matching skills for green jobs and to facilitate skilled labour mobility and to drive the green economy across countries.

Recommendation 7

Focus on the local level

Beyond the efforts being made to attain greater sustainability, cities tend to be nodes for the concentration of migrants and refugees. Given their enormous populations, infrastructure and production activities, cities also tend to account for 60 percent of global carbon emissions. Besides mostly working in sectors that would greatly be affected by the green transition, most migrants tend to be employed in low-skilled occupations or may be unable to effectively participate in the labour market.

As part of ongoing green city initiatives and programmes (see, REN21, 2021,p.138), city authorities could target green skills training and education at both employed migrant workers (reskilling and upskilling) and refugees. Given their more prominent role in migration governance, for example, through the GFMD Mayors Mechanism, they are well placed to initiate and pilot local-level schemes and offer practices to be adapted and/or replicated. Like the the "Emplea Verde" programme in **Spain**, which also targets the green skills training of migrant groups (see Cedefop, 2018a and box 11), an alternative consideration for cities is that green skills VET modules could be integrated into broader migrant and refugee integration programmes or educational curricula for refugees. The provision of green skills training to migrants and refugees could help address the skills gaps in renewable energy and other green sectors, as well as serve to be viable avenues for participation in local labour markets and effective integration.

6.1 Green Economy and Migration: areas for further research and development

The foregoing discussion has provided insights into possible areas of convergence and avenues that (labour) migration and existing policy initiatives could be leveraged to enhance skills development and transfer to drive the green economy. However, the areas identified are by no means exhaustive of the possible crossovers between green economy and migration. To further stimulate the discussion and to examine the interlinkages, as well as possible areas and ways to tap into the potential of labour migration in the service of the green economy, three areas for further research and dialogue are hereby outlined:

- A central focus of the green growth agenda is to promote a just and inclusive growth for all. But as shown in the discussion, most skills and mobility initiatives often tend to focus more on highly-skilled migrants. Given that a functional green economy will rely on a wide variety of skills set for the various sectors, a consideration for 'skills mix' by also focusing on low-skilled migrants would be of essence. As widely being advocated by the Center for Global Development, an area for further research and policy dialogue would be to examine the differential skills set of both high- and low-skilled migrants and how they could provide complementarities to address the skills shortages and skills demands of the green economy.

- Another area for consideration could be to support research and explore possible strategies for raising awareness and building knowledge about the green economy and possible areas of mainstreaming labour migration into green growth strategies and vice versa at both national and sub-national level (especially ministries of labour and employment, statistical agencies, local governments, departments and private sector). The target should also be to build a database of skills profiles, including that of migrants. This would allow for an informed appreciation of the available skills and to tailor skills training for the green economy.

- Building on the examples provided in section 2 of this discussion paper, another area for further research would be to conduct more sector-level assessments to ascertain the impact of the green transition. An appreciation of sector-specific impact would allow for a unified or common dataset, facilitate skills anticipation for the different sectors and in which areas labour migration could be tapped to respond to the skills need of these sectors.

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