CENTER FOR GLOBAL DEVELOPMENT

Options for Green-Skilled Migration Partnerships

A Guide for Policymakers

HELEN DEMPSTER · SAM HUCKSTEP

Abstract

The green transition is widely expected to lead to high levels of net job creation, with roles distributed across the pay and skill spectrum. To fill these roles, many countries of destination will need to use migration alongside their domestic labour supply. Yet few countries of origin have enough skilled workers to meet their own green transition targets. As a result, any green-skilled migration facilitated by countries of destination should be linked with investments in the training, recruitment, and retention of workers into green jobs within countries of origin. This paper explores three models that link training and migration in a partnership framework—fixed-term migration; Global Skill Partnerships; and migration with parallel investments—to maximise both economic development and carbon reduction benefits. For each model, the paper outlines key considerations that should be taken into account along with a worked example. It also includes a 'guide', walking policymakers through the different models to understand which would best meet the needs of countries of origin, countries of destination, and employers.

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Introduction

The 'green transition' is accelerating. Globally, more than 80 countries have pledged to substantially reduce their carbon emissions in the coming decades.[1] This requires the rapid development and expansion of low-carbon or 'green' technologies, such as solar energy; wind power; bioenergy; hydropower; building insulation and decarbonisation; and the electrification of transport networks. There are many constraints to this green transition, such as a lack of finance, political will, and technology. Yet the lack of skilled manpower is only starting to be discussed.

The green transition is widely expected to lead to high levels of net job creation; the International Energy Agency (IEA) expects that there will be 14 million new green jobs by 2030.[2] Policymakers often claim that these jobs will be highly paid and highly skilled, in a bid to garner local support for the green transition.[3] However, evidence demonstrates that these jobs will actually be distributed across the pay and skill spectrum. For example, wind, solar, and hydrogen jobs offer wages 15–30 percent lower than those in conventional energy.[4] While wages in green transition-relevant sectors may increase with government stimuli, they may not rise fast or far enough to attract local workers during the necessary timeframes. In addition, many green jobs will not require a high level of skills; for example, nearly 70 percent of the low-carbon jobs created by the United States (U.S.) Inflation Reduction Act (IRA) will require specific vocational training at most, rather than a college degree.[5]

If countries of destination are unable to attract enough domestic workers into these new green jobs, they may open up legal migration pathways to attract skilled immigrants (see Box 1). Yet, at present, almost all countries are struggling to find enough green-skilled workers.[6] Expanding skilled migration *alone* could therefore undermine the ability of countries of origin to either meet their own green transition goals or, in many cases, supply reliable and affordable energy to

1 Net Zero Tracker. 2021. "Post-COP26 Snapshot." November 25, 2021. https://zerotracker.net/analysis/post-cop26-snapshot.

2 International Energy Agency (IEA). 2022. *World Energy Employment 2022*. Paris: IEA. https://www.iea.org/reports/world-energy-employment.

3 See e.g., Rishi Sunak. 2022. "COP27". Hansard, Volume 722, November 9, 2022. https://hansard.parliament.uk/commons/2022-11-09/debates/D1AA404D-7507-4FC4-A0FA-60F35BFBFBCD/COP27; and White House. 2021. *Fact Sheet: President Biden Tackles Methane Emissions, Spurs Innovations, and Supports Sustainable Agriculture to Build a Clean Energy Economy and Create Jobs*. Washington, D.C.: White House. https://uk.usembassy.gov/president-biden-tackles-methane-emissions-spurs-innovations-supports-sustainable-agriculture-to-build-a-clean-energy-economy-create-jobs/.

4 International Energy Agency (IEA). 2023. *World Energy Employment 2023*. Paris: IEA. https://www.iea.org/reports/world-energy-employment-2023.

5 Robert Pollin et al. 2023. *Employment Impacts of New U.S. Clean Energy, Manufacturing, and Infrastructure Laws*. Amherst: Political Economy Research Institute, University of Massachusetts. https://peri.umass.edu/publication/item/1758-employment-impacts-of-new-u-s-clean-energy-manufacturingand-infrastructure-laws.

6 IEA, *World Energy Employment 2023*, 2023.

their populations.[7] We propose that any expansion of green-skilled migration should therefore be paired with investments in the country of origin, ideally supporting the training, recruitment, and retention of workers in green transition-relevant sectors. Doing so would ensure that migration does not prevent any countries from meeting their green transition goals, and that the workforce is present to contribute to a global reduction in carbon emissions. It is, moreover, possible that access to international migration could incentivise greater interest in green transition-relevant skills.[8] This could support countries of origin in accessing a reliable pipeline of skilled workers in subsequent years, when they will be most needed.[9]

CGD's project, 'Linking Training and Migration for the Green Transition', explores these issues.[10] A first paper, published in early 2024, looked at the demand for, and supply of, green-skilled workers in ten countries of origin and destination.[11] In this second paper, three models that pair migration with training within a partnership framework—fixed-term migration; Global Skill Partnerships; and migration with parallel investments—are described in detail and summarised in a guide for policymakers. It is informed by a series of roundtables with policymakers, employers, and other relevant stakeholders within countries of destination, as well as conversations with policymakers in countries of origin. It is hoped that this paper will be of interest and relevance to policymakers in a wide range of government departments (such as development, interior, and energy) in both countries of origin and destination.

7 Notably, many possible countries of origin currently have inadequate domestic energy access; while they may have decarbonisation goals, their priority is often to increase reliable energy provision, including through high-carbon supply. See e.g., Martin Kitetu et al. 2021. "Decarbonising Africa's grid electricity generation". CDC Research Insight, No. 19. London: CDC. https://www.bii.co.uk/en/news-insight/research/decarbonising-africas-grid-electricity/; and Philip Gass et al. 2021. *Just Transition to a Green Economy*. International Institute for Sustainable Development (IISD) Report. Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. https://www.iisd.org/publications/report/just-transition-green-economy.

8 Research suggests that, where there is access to legal labour migration pathways, demand for the training necessary to access these opportunities may increase. It is possible that this will constitute a 'brain gain', with those skilled workers who are unable or unwilling to undertake migration staying in the country of origin. See Paolo Abarcar and Caroline Theoharides. 2024. "Medical Worker Migration and Origin-Country Human Capital: Evidence from U.S. Visa Policy". *The Review of Economics and Statistics*, 106(1), 20–35. https://doi.org/10.1162/rest_a_01131; and Lee Crawford and Helen Dempster. 2024. "UK Recruitment of Nigerian Nurses Can Be Win-Win". Center for Global Development (CGD) Blog. February 19, 2024. https://www.cgdev.org/blog/uk-recruitment-nigerian-nurses-can-be-win-win.

9 See e.g., predictions from the IEA of accelerating renewables buildout in emerging markets and developing economies towards 2040–2050 under the stated policies scenario. International Energy Agency (IEA). 2021. *Net Zero by 2050: A Roadmap for the Global Energy Sector*. Paris: IEA. https://www.iea.org/reports/net-zero-by-2050.

10 For more information on, and outputs from, this project, please see: https://www.cgdev.org/project/linking-training-and-migration-green-transition. In phase two of this project, we hope to delve into green-skilled migration partnerships in more detail.

11 Sam Huckstep and Helen Dempster. 2024. *Meeting Skill Needs for the Global Green Transition: A Role for Labour Migration?* Washington, D.C.: Center for Global Development (CGD). https://www.cgdev.org/publication/meeting-skill-needs-global-green-transition-role-labour-migration.

BOX 1. Clarification on terms

- Legal labour migration partnership. A programme: (1) moving people for work between a lower-income country of origin to a higher-income country of destination; (2) which is skill and/or sector-targeted; and (3) which has an important government component in its design and/or implementation.[12] This differs from visa relaxation and straightforward international recruitment in that it is targeted, deliberately managed by one or more governments, and (often) intended to have mutual benefits.
- Skill levels. There is no uniform definition of skill levels, nor any single methodology for skill needs analysis. In many countries, 'skills' are assessed according to educational attainment levels or occupational skills as measured through sector-specific qualifications.[13] As a result, these categorisations can be arbitrary and sometimes even contradictory.[14] Broadly, 'high' skills are associated with advanced university education and 'low' skills are associated with manual work. Many 'low-skill' jobs are nonetheless technically challenging, requiring experience and expertise. In this paper, we use the term 'mid-skill' to refer to jobs requiring technical and vocational education and training (TVET).[15]

Options to facilitate green-skill migration

Fixed-term migration

One way in which countries could facilitate labour migration for the green transition is through a *circular* or *temporary* migration model, essentially encouraging the mobility of participants on a fixed-term basis (Figure 1). In a circular model, temporary migration is undertaken (often for less than a year) on a repeated basis, with the migrant leaving and then returning to their country of origin more than once.[16] In a temporary model, migrants enter the country of destination for a period of time (say, two to three years) before returning permanently to their country of origin. These models are particularly well suited for jobs which are not in demand year round/in the long-term, and/or to support skill-building for trainees.

We see this model applied best where countries of origin are able to train a surplus of workers with green transition-relevant skills. Its potential lies in increased access to remittances and

12 Helen Dempster et al. 2022. *Financing Legal Labor Migration Pathways: From Pilot to Scale.* Center for Global Development (CGD) Policy Paper 261. Washington D.C.: CGD. https://www.cgdev.org/publication/financing-legal-labor-migration-pathways-pilot-scale.

13 International Labour Organisation (ILO). n.d. "Skills and migration". https://www.ilo.org/topics/labour-migration/areas-work-labour-migration/skills-and-migration.

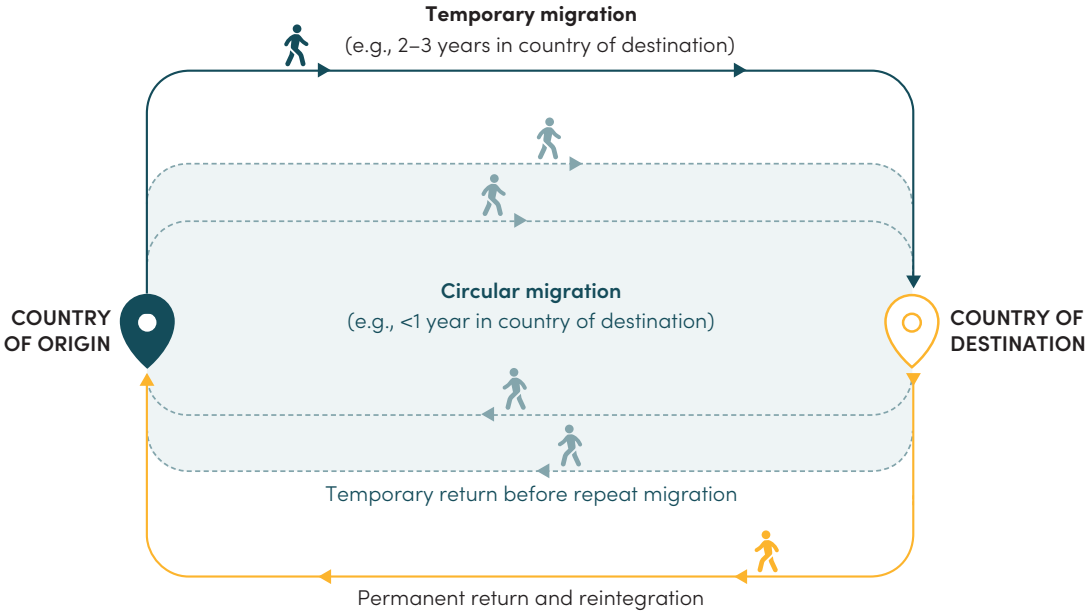
14 Zuzana Cepla. 2021. "Skills Mix: Foreign-Born Workers Bring More Than University Degrees to High-Income Countries". Labor Mobility Partnerships (LaMP) Brief. April 28, 2021. https://lampforum.org/2021/04/28/skills-mix-foreign-born-workers-bring-more-than-university-degrees-to-high-income-countries/.

15 Zuzana Cepla and Helen Dempster. 2021. "There's No Such Thing as a "Low"-Skill Worker". Center for Global Development (CGD) Blog. June 23, 2021. https://www.cgdev.org/blog/theres-no-such-thing-low-skill-worker.

16 Kathleen Newland. 2009. *Circular Migration and Human Development*. UNDP Research Paper 2009/42. New York: United Nations Development Programme (UNDP). https://hdr.undp.org/sites/default/files/hdrp_2009_42.pdf.

international experience, and in its ability to provide under-employed workers in countries of origin with urgent work in countries of destination, as demonstrated in the solar panel installer partnership between Germany's solar association and India's Skill Council for Green Jobs (SCGJ) (see Box 4).

FIGURE 1. The fixed-term migration model



Applying the fixed-term migration model to the green transition

Fixed-term migration models can be attractive for several reasons. For countries of destination, they can be more politically palatable than other migration models as participants are expected to return home to their countries of origin. For employers, they can offer a way to obtain skilled workers for the period required. For countries of origin, they provide benefits such as remittances and exposure to new skills, without losing skilled workers permanently. For migrants, they offer higher earning opportunities and access to skill-building and training, but allow them to remain tied to their country of origin. As a result, fixed-term migration models can work best when the migrants themselves are young and seeking increased access to capital and knowledge to support them back in their country of origin. Temporary migration is typically not, however, a suitable response to permanent shortages; it may frustrate employers who would prefer to keep reliable workers on a long-term basis once obtained.

Circular migration is often used to attract the same workers repeatedly to support a predictable and temporary demand within the agricultural, horticultural, and hospitality sectors. There are unlikely to be many jobs needed for the green transition which fall into this category.[17] Solar panels,

17 It is possible that some climate-smart agriculture jobs can be filled through circular migration models, but this will vary depending on the required skill levels.

for example, can be installed all year round in most geographies; even if installation rates are typically higher during the summer months due to increased awareness and demand, these peaks and troughs are not similar to those experienced by the agricultural sector.

However, there may be jobs which are adequately served by longer-term temporary migration models. Where a country introduces a subsidy boosting demand on a non-permanent basis, for example, it may benefit from allowing international recruitment for the duration of the subsidy.

There may also be an interest in encouraging fixed-term migration to support green-skilled trainees. Migrants would enter the country of destination for a fixed period of time, gaining skills, experience, and perhaps even investment which they can then apply when they return home. For example, every year, around 20,000 skilled crafts and trades apprenticeship places in Germany are unfilled. These places could be filled by migrants who could subsequently stay to contribute their new skills to employers or return to assist their country of origin.[18] In the U.S., the J-1 visa could be used to support the fixed-term migration of green-skilled trainees, enabling them to gain skills and experience in the U.S. before returning home.[19] In Europe, a similar scheme ('MOVE_GREEN') is already underway between Spain and Morocco.

Key considerations

For a fixed-term migration model to be successful, several considerations would ideally be taken into account in partnership design and implementation. Firstly, prioritise human capital increase, enabling participants to gain skills in the country of destination that they can then apply when they return home. Secondly, safeguard participants against exploitation and abuse to ensure positive outcomes.[20] Thirdly, recognise the needs of employers in both countries. Fourthly, support participants upon return.

18 James Gordon. 2023. "Germany's Industrial Skills Shortage: Challenges and Solutions". Raconteur. April 25, 2023. https://www.raconteur.net/insights/germanys-industrial-skills-shortagechallenges-and-solutions; and Jonathan Packroff. 2023. "Workers for Future: Germany's Dual Vocational Training under Stress". Euractiv. February 24, 2023. https://www.euractiv.com/section/economy-jobs/news/workers-for-future-germanys-dual-vocational-training-under-stress/.

19 Helen Dempster et al. 2022. *Creating a Global Skill Partnership with Central America Using Existing US Visas*. Center for Global Development (CGD) Policy Paper 272. Washington, D.C.: CGD. https://www.cgdev.org/publication/creating-global-skill-partnership-central-america-using-existing-us-visas.

20 Green transition-relevant sectors, such as solar, can operate with short-term and underpaid contracts, and potentially without adequate safety provisions. See e.g., Lee Harris. 2022. "Workers on Solar's Front Lines". *The American Prospect*. https://prospect.org/labor/workers-on-solars-front-lines/; and Noam Scheiber. 2021. "Building Solar Farms May Not Build the Middle Class". *The New York Times*. https://www.nytimes.com/2021/07/16/business/economy/green-energy-jobs-economy.html. In Australia, migrant workers on solar firms are reported to have previously been exploited by employers, although this is understood to be infrequent. See Australian Council of Trade Unions (ACTU). 2020. *Sharing the Benefits with Workers: A Decent Jobs Agenda for the Renewable Energy Industry*. Melbourne: ACTU. https://beta.actu.org.au/wp-content/uploads/2023/06/media1449338d61-renewable-energy-report.pdf.

Prioritise human capital increase

Fixed-term migration may not, *in and of itself*, organically lead to substantial human capital development.[21] If a fixed-term migration model is to contribute to 'brain gain', it should therefore prioritise providing participants with access to skill-building, education, and training opportunities while they are in the country of destination and, potentially, before (see Box 2).

Ideally, these new skills would be easily applicable when the participant returns home. In some cases, migrants may develop skills specific to equipment that is unavailable in the country of origin: for example, skills gained by Thai migrants working with drip-fed agriculture in Israel have been inapplicable upon return to Thailand, where drip-fed systems are less prevalent.[22] This is far from inevitable, and in many cases new human capital is not hindered by technological gaps.[23] In the green transition, however, this can be a risk according to the speed of technology spread: heat pump systems, for example, are likely to be unaffordable in many countries of origin in the medium-term, and partnerships in this area would therefore need to provide portable skills that are also useful in the installation of more widespread air conditioning.[24]

Previous efforts to provide migrants with training have not always been highly successful. The 'Temporary and Circular Labour Migration Model' (TCLM) between Colombia and Spain provided participating seasonal agricultural workers with training in market analysis and business management to improve the use of capital earned during the programme. It is uncertain how effective this training was: only half of all investments made by returning migrants were profitable.[25]

Other projects have also struggled, and should be learned from. The 'Blue Birds' programme run by the Netherlands incorporated a personal development plan for migrants as a core part of its development goals. Fulfilment of these plans was hindered, however, by a lack of clarity regarding the role of the plan in the programme; training obligations for employers; and the plan's role in visa procedures.[26] An effective traineeship programme in particular requires personal development plans agreed by all relevant actors and carefully monitored throughout.

21 Carlos Vargas-Silva. 2021. *The Impact of Circular Migration Schemes on Development Outcomes: Rapid Evidence Assessment*. London: Foreign, Commonwealth, and Development Office (FCDO). https://www.gov.uk/research-for-development-outputs/the-impact-of-circular-migration-schemes-on-development-outcomes-rapid-evidence-assessment.

22 Patrick Sakapolrak and Harald Sterly. 2020. "Building Climate Resilience through Migration in Thailand". *Migration Information Source*. Washington D.C.: Migration Policy Institute (MPI). https://www.migrationpolicy.org/article/building-climate-resilience-through-migration-thailand.

23 OECD. 2017. *Interrelations between Public Policies, Migration and Development*. Paris: OECD Development Centre. https://doi.org/10.1787/9789264265615-en.

24 Huckstep and Dempster, *Meeting Skill Needs for the Global Green Transition*, 2024.

25 Ricard Zapata-Barrero, Rocio Faúndez García, and Elena Sánchez. 2009. "Temporary and Circular Labour Migration (TCLM) of workers between Colombia and Spain: A model to consolidate", in *Temporary and Circular Labour Migration: Experiences, Challenges and Opportunities*, ed. International Organisation for Migration (IOM) (Geneva: IOM, 2009), 48–76. https://repository.iom.int/bitstream/handle/20.500.11788/241/COL-OIM%200321%20N2-2.pdf?sequence=1&isAllowed=y; and Center for Global Development (CGD). n.d. "Temporary and Circular Labour Migration (TCLM) Model." https://gsp.cgdev.org/legalpathway/temporary-and-circular-labour-migration-tclm-model/.

26 Siegel and van der Vorst, *Evaluation of the "Blue Birds" Circular Migration Pilot*, 2012.

Safeguard participants against exploitation and abuse

The benefits of fixed-term migration models to participants are often reduced due to exploitation and abuse. Proactive steps should therefore be taken at every stage of the process—during recruitment, employment, and upon return—to maximise positive outcomes. Migrant workers should be protected from exploitation regardless of the duration of their migration.

- **Recruitment.** Large fees are frequently charged by intermediaries (in contravention of International Labour Organization (ILO) guidelines), often through opaque and exploitative structures.[27] Fee structures should therefore be transparent, and recruitment should be tightly regulated to minimise unexpected charges.
- **Employment.** Fixed-term migrants, whose visa is often tied to a designated employer, can be at greater risk of exploitation and abuse than other migrants.[28] Exploitation may take the form of withheld wages, unsafe working conditions, excessive (or inadequate) working hours, and opaque fees.[29] To reduce migrants' vulnerability to such situations, visas should be untied from employers.[30] Where this is unavoidable, employers should be tightly regulated, with employer vetting; clear redress mechanisms; an ombudsman known to, and contactable by, migrants; and regular assessments of employment quality. Labour hire companies should be licensed using a fully developed legal framework setting out clear obligations, accompanied by effective enforcement. Lessons can be learned from Australia's 'Seasonal Worker Programme' (SWP), which reduced exploitation rates through reforms.[31] These reforms have included centralised licensing of all labour hire companies, allowing tight vetting; more active monitoring of employers; the creation of a Deed of Agreement signed by employers, stating their acceptance of numerous obligations; and expanded powers for regulatory agencies.
- **Return.** Sustainable reintegration should be supported; more information regarding this is provided below.

27 International Labour Organization (ILO). 2023. *Guidance note: Wage protection for migrant workers*. Geneva: ILO. https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_878658.pdf.

28 Rainer Bauböck and Martin Ruhs. 2022. "The elusive triple win: addressing temporary labour migration dilemmas through fair representation", *Migration Studies*, 10(3), 528–552. https://doi.org/10.1093/migration/mnac021.

29 See, for example, Inga Thiemann et al. 2024. *UK agriculture and care visas: worker exploitation and obstacles to redress*. Modern Slavery and Human Rights Policy and Evidence Centre Research Report. London: Bingham Centre. https://labourexploitation.org/publications/uk-agriculture-and-care-visas-worker-exploitation-and-obstacles-to-redress/.

30 Rebekah Smith and Anita Vukovic. 2019. "The Benefits of 'Untying': How to Move from Employer- to Occupation-Specific Work Permits." Center for Global Development (CGD) Blog. July 26, 2019. https://www.cgdev.org/blog/benefits-untying-how-move-employer-occupation-specific-work-permits.

31 Richard Curtain and Stephen Howes. 2020. *Governance of the Seasonal Worker Programme in Australia and sending countries*. Canberra: Crawford School of Public Policy. https://devpolicy.org/publications/reports/Governance_SWP_2020_WEB.pdf.

Recognise the needs of employers in both countries

For a fixed-term migration model to be useful to employers, it should meet their needs now and in the future. This requires a cross-government understanding of priorities and timeframes. If, for example, a country plans to significantly increase solar panel installations, it should estimate how many workers will be needed, when, and where; and prepare domestic and international recruitment pipelines to meet these needs. To do this, countries need adequate labour market data; a good understanding of domestic training capacities; and a politically viable green transition plan from which occupation-specific conclusions can be reliably drawn. For many countries, both data and reliable industrial policies are currently lacking.

The reliability of participants' skills is among the most important considerations for employers in judging whether or not to engage in a migration model.[32] Many green transition-relevant jobs, such as electrical assistants supporting fully trained electricians, require limited training and few pre-requisite qualifications. Evidence of prior skills will therefore be less important. If a partnership is focusing on a higher level of skills, such as electricians themselves, prior skills must be efficiently recognised.[33]

Support participants upon return

In many contexts, returning migrants use money earned elsewhere to fund entrepreneurial activities in their country of origin.[34] Migration partnerships focused on decarbonisation could, if this trend holds, have spillover effects thanks to the creation of new green transition-relevant firms by returning migrants. If a circular migration model is used, there is a greater risk that migrants become under-employed after returning to their country of origin.[35] In these cases, the partnership's contribution to economic development can be undermined. Fixed-term migration partnerships could therefore take steps to support migrants' ability to contribute to the green transition upon their return. This could be especially useful if the country of origin's green transition is occurring later than the transition in the country of destination. In these cases, the country of origin can grow its pool of skilled workers through facilitating employment abroad, benefitting from their skills at a later stage.

32 Daphné Bouteillet-Paquet. 2021. *Looking at labour mobility initiatives from the private sector perspective: Key lessons learned.* Brussels: International Organization for Migration (IOM). https://eea.iom.int/match-hiring-african-talents.

33 Recognition of prior skills can be facilitated through international information-sharing and standardisation networks, such as the European Network of Information Centres (ENIC) network uniting National Academic Recognition Information Centres (NARIC), managed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Council of Europe.

34 See e.g., Matloob Piracha. 2015. "Occupational choice of return migrants". IZA briefing, No. 197. http://dx.doi.org/10.15185/izawol.197; Jackline Wahba and Yves Zenou. 2012. "Out of sight, out of mind: Migration, entrepreneurship and social capital". *Regional Science and Urban Economics,* 42(5): 890–903. https://doi.org/10.1016/j.regsciurbeco.2012.04.007; and Laurent Bossavie et al. 2024. "From migrant worker to owner: When temporary migration is used to start one's own business". VoxEU. March 8, 2024. https://cepr.org/voxeu/columns/migrant-worker-owner-when-temporary-migration-used-start-ones-own-business.

35 Vargas-Silva, *The Impact of Circular Migration Schemes*, 2021.

Implementers, particularly governments in the country of destination, could cooperate with other actors in the country of origin to create a 'pool' of possible employers with labour needs with whom returning participants can be efficiently matched, and to validate skills gained.[36] Countries of destination seeking to support development and the green transition in countries of origin could also support returning migrants with resources allowing productive reintegration, including access to credit; advice in business creation; and mentorship.[37] This was an important factor affecting the success of returning migrants participating in the TCLM project.[38]

For a traineeship programme to be successful, trainees will require support in finding employment upon return to the country of origin. In this, lessons can be learned from the MOVE_GREEN project currently being implemented between the Spanish region of Andalucia and the Moroccan national employment agency Anapec. This programme will ultimately bring up to forty young Moroccan graduates to Spain for four months of training and internships in green transition-relevant occupations, before facilitating their return to employment by Moroccan firms.[39] The programme demonstrates the importance of close engagement with employers in both countries throughout the process, in order to ensure that learning and employment opportunities are both available and applicable. It is also important that any skills and qualifications obtained by participants in the country of destination are recognised and respected by country of origin employers upon return.

Some partnerships have gone one step further. Germany's Federal Ministry for Economic Cooperation and Development (BMZ) has for several years run the 'VET4Africa' programme, in which solar panel technicians travel to Germany to become solar trainers. These courses are delivered in-person in Bavaria, or, during COVID-19, online. From 2018–2023, 300 trainers were trained, who subsequently trained 4,000 solar panel technicians upon return to countries of origin including Kenya, Cameroon, and Uganda.[40] In pursuing this model, support should be provided in the country of origin to ensure that participants have the opportunity to share their new skills; for example, through integration with TVET structures. It is also important that these models are evaluated to assess their impacts and value for money.

36 Charlotte Müller, David Khoudour, and Johannes Tarvainen. 2023. *Empowering Migrants and Communities: Private sector engagement for inclusive sustainable development*. Geneva/New York: IOM/UNDP. https://www.undp.org/sites/g/files/zskgke326/files/2023-10/undp-iom-empowering-migrants-and-communities-private-sector-engagement-for-inclusive-sustainable-development.pdf.

37 Cédric Dekeyser. 2021. *The use of microcredit in migrant reintegration contexts*. EU-IOM Knowledge Management Hub Paper 1. Geneva: International Organization for Migration (IOM). https://migrantprotection.iom.int/system/files/resources/f925401a-f652-405c-9b32-16edf806b1e6/document/01_knowledge_paper_final.pdf?type=node&id=870&lang=en.

38 Zapata-Barrero et al., *Temporary and Circular Labour Migration*, 2009.

39 Migration Partnership Facility (MPF). 2024. "(E)Co-development for innovation and employment in green and circular economy between Andalusia and Morocco (MOVE_GREEN)". https://www.migrationpartnershipfacility.eu/mpf-projects/26-e-co-development-for-innovation-and-employment-in-green-and-circular-economy-between-andalusia-and-morocco-move-green.

40 Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). 2023. "From Bavaria to Africa". https://gruene-buergerenergie.org/en/format/feature/from-bavaria-to-africa/.

BOX 2. Fixed-term labour migration in the Pacific

Multiple bilateral fixed-term migration partnerships are operational within the Pacific. Most participants moving under these programmes work in low-skilled sectors, especially agriculture. More could be done to support training and mobility in green transition-relevant sectors, and recent Australian statements suggest this is being planned.[41]

For example, the Australia Pacific Training Coalition (APTC) is an Australian-led programme operational across the Pacific which has trained over 20,000 workers since 2007. From 2021, the programme has also included a 'labour mobility track', training graduates to international standards for employment overseas. Migration is most commonly facilitated through the Pacific Australia Labour Migration (PALM) scheme and New Zealand's Recognized Seasonal Employer (RSE) scheme; the APTC assists in matching graduates to regional employers.[42] The APTC already includes training courses relevant to the green transition; several hundred Fijian participants, for example, have been trained in skills for employment in solar panel and air-cooling installation.[43]

A training and visa regime already exists through the APTC and the PALM scheme, which could be retooled for greater focus. This could include a greater emphasis on matching graduates with employers, which has previously been a challenge for the APTC,[44] facilitating connections between green-skilled APTC graduates and relevant employers under the Temporary Skills Shortage programme.[45] A renewed APTC could also include a greater focus on, and availability of, training courses relevant to the green transition and useful to both countries of origin and of destination, accompanied by parallel country of destination investment into necessary Pacific systems beyond training.

41 Jobs and Skills Australia. 2023. *The Clean Energy Generation*. Canberra: Jobs and Skills Australia. https://www.jobsandskills.gov.au/publications/the-clean-energy-generation.

42 Australia Pacific Training Coalition (APTC). 2020. *The Role of APTC in Labour Mobility*. Suva: APTC. https://www.aptc.edu.au/docs/default-source/reports/labour-mobility/the-role-of-aptc-in-labour-mobility.pdf?sfvrsn=9295a0f5_16.

43 Australia Pacific Training Coalition (APTC). 2024. "APTC Courses". https://aptc.edu.au/courses/courses-info; and APTC. 2022. "APTC Lifts Skills for Fijian Economy". October 6, 2022. https://www.aptc.edu.au/news/news/2022/10/06/aptc-lifts-skills-forfijian-economy.

44 Richard Curtain and Stephen Howes. 2021. "APTC graduates finding it increasingly difficult to find employment". DevPolicy Blog. February 17, 2021. https://devpolicy.org/aptc-graduates-finding-it-increasingly-difficult-to-find-employment-20210217/.

45 Stephen Howes. 2021. "APTC's labour mobility mandate: 16 years on". DevPolicy Blog. August 11, 2021. https://devpolicy.org/aptcs-labour-mobility-mandate-16-years-on-20210811/.

This would have several major benefits:

1. Training in Pacific Island countries can be much cheaper than the cost of obtaining comparable qualifications in Australia or New Zealand. For the countries of destination, this therefore allows a potential 'wage arbitrage' to obtain qualified workers more easily.[46]
2. Pacific Island countries are highly vulnerable to the increasing effects of climate change: they have a strong interest in supporting mitigation, and new skills—such as in solar panel installation—could also support adaptation to climate change.
3. Pacific Island countries benefit significantly from remittances, which have been known to also support adaptation.[47]
4. Participants within existing fixed-term migration programmes are known to prefer to undertake circular migration, increasing opportunities while remaining rooted in countries of origin. Access to a scaled-up programme would significantly increase Pacific islanders' agency in a new area of work.[48]

Global Skill Partnerships

The Global Skill Partnership migration model increases the global stock of workers with a specific skill, benefiting employers in both the country of destination and origin, and mitigating brain drain (Figure 2).[49] In this model, the country of destination agrees to provide technology and finance to train potential migrants with targeted skills in the country of origin, prior to migration, and gets migrants with precisely the skills they need to integrate and contribute best upon arrival. The country of origin agrees to provide that training and gets support for the training of non-migrants too, increasing rather than draining human capital.

The defining feature of the Global Skill Partnership is the 'dual track' system. At the start, or during the training, the participants can pick which track they want to go down: a 'home' track for

46 Satish Chand, Michael Clemens, and Helen Dempster. 2021. *A Pacific Skills Visa: Improving Opportunities for Skilled Migration Throughout the Pacific Region*. Center for Global Development (CGD) Policy Paper 231. Washington, D.C.: CGD. https://www.cgdev.org/publication/pacific-skills-visa-improving-opportunities-skilled-migration-throughout-pacific-region.

47 Dung Doan et al. 2023. "Migration and labor mobility from Pacific Island countries". Background Paper for the *World Development Report 2023: Migrants, Refugees, and Societies*. Washington, D.C.: World Bank. https://thedocs.worldbank.org/en/doc/511bd7fb799a3379242b5c151b2a14d5-0050062023/original/WDR-Pacific-Islands-case-study-FORMATTED.pdf; and Heather Nunns, Charlotte Bedford, and Richard Bedford. 2020. *RSE Impact Study: Synthesis Report*. Wellington: Government of New Zealand. https://www.immigration.govt.nz/documents/statistics/rse-impact-study-synthesis-report.pdf.

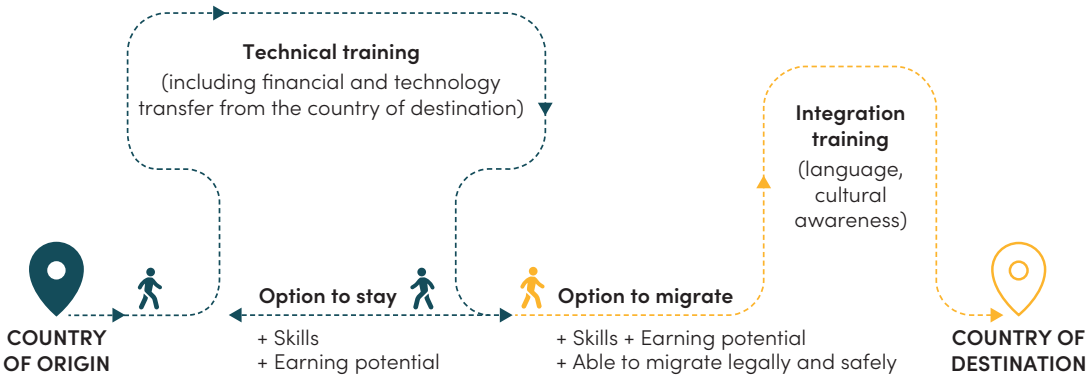
48 Dung Doan, Matthew Dornan, and Ryan Edwards. 2023. "New data to inform big decisions around Pacific labour mobility". DevPolicy Blog. November 19, 2023. https://devpolicy.org/new-data-to-inform-big-decisions-around-pacific-labor-mobility-20231119/.

49 To learn more about the Global Skill Partnership model, see https://gsp.cgdev.org/.

non-migrants, and an 'away' track for migrants.[50] Those who choose to stay are plugged into the local labour market, with increased skills and earning potential. Those who choose to move also have increased skills and earning potential, and the ability to migrate legally and safely. They could also be provided with additional training in soft skills, for example in different languages or other facets of integration.[51] Language training, often one of the biggest hurdles in migration due to the cost of training and the time needed, requires particular attention.[52]

We see the Global Skill Partnership model working best where both the country of destination and country of origin share the same skill deficit, and where this deficit is expected to continue for some time. It has high potential for delivering a reliable supply of workers trained to the standard needed, thus mitigating difficulties of qualification recognition, without depriving the country of origin of necessary workers.

FIGURE 2. The Global Skill Partnership migration model



Applying the Global Skill Partnership model to the green transition

Global Skill Partnerships are particularly applicable to sectors which are suffering from a global shortage of workers. As a result, the emigration of skilled workers out of this sector could have large negative impacts on the country of origin. For example, every country in the world needs more skilled healthcare workers; their emigration has created challenges in delivering health services within countries of origin, and may have contributed to the spread of diseases such as Ebola.[53] This dynamic

50 Global Skill Partnerships are a tighter subset of the newer category of Skills Mobility Partnerships (SMPs). They go beyond SMPs in requiring an increase in the total population of skilled workers, with some remaining in the country of origin. This ensures development benefits beyond remittances.

51 Michael Clemens. 2015. "Global Skill Partnerships: a proposal for technical training in a mobile world." *IZA Journal of Labor Policy*, 4. https://doi.org/10.1186/s40173-014-0028-z.

52 Lessons can be learnt in following LaMP's support for language training and financing approaches in India-Germany migration. See LaMP. 2023. "Language without Borders: Designing a financial solution to scale language training for migrant workers". September 14, 2023. https://lampforum.org/2023/09/14/language-without-borders-designing-a-financial-solution-to-scale-language-training-for-migrant-workers/.

53 Barbara McPake, Prarthna Dayal, and Christopher H. Herbst. 2019. "Never again? Challenges in transforming the health workforce landscape in post-Ebola West Africa." *Human Resources for Health*, 17. https://doi.org/10.1186/s12960-019-0351-y.

can also be seen within green transition-relevant sectors, with many countries of origin *also* needing an increase in the number of skilled construction professionals, electricians, and engineers.[54] For example, 960,000 additional waste management jobs are forecast to be created by 2030 in the EU under the European Green Deal, half of which will require a low- or mid-level of skills.[55] This area also has the potential for significant job creation in countries of origin, presenting a good opportunity for a Global Skill Partnership.[56]

In the case of workers with skills needed for the green transition, this dynamic is even more acute. The loss of one skilled worker undermines the ability of a country of origin to meet their own green transition targets, and may even lead to a net *increase* in carbon generation.[57] For this reason, countries of origin and destination have a vested interest in ensuring that migration is supported by training, a dynamic different from other areas of migration policy.

There are three specific contexts for which Global Skill Partnerships would be the most relevant migration model:

1. **To meet predictable demand.** Global Skill Partnerships exist to build a pipeline of skilled workers in countries of origin and destination that can be used to meet employer shortages. As such, they are most relevant when: (1) shortages are known of in advance; and (2) the skills required are relatively stable over time.
2. **To meet similar skill shortages.** It will be easier and cheaper to deliver a Global Skill Partnership if both the country of origin and destination share similar skill shortages and therefore employers in both countries have an interest in increasing their supply of skilled workers.
3. **To streamline qualification recognition.** As a Global Skill Partnership provides training up to a predefined standard (often that of the country of destination), this mitigates challenges with skill and qualification recognition.

54 See e.g., International Renewable Energy Agency (IRENA) and African Development Bank (AfDB). 2022. *Renewable Energy Market Analysis: Africa and Its Regions*. Abu Dhabi and Abidjan: IRENA and AfDB. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2022/Jan/IRENA_Market_Africa_2022.pdf.

55 Cedefop. 2022. *Too good to waste: Tapping the potential of vocational education and training in the waste management sector*. Thessaloniki: Cedefop. https://www.cedefop.europa.eu/files/9175_en.pdf.

56 See e.g., International Labour Organisation (ILO). 2017. *Just transition, decent work and climate resilience in Asia and the Pacific*. COP23 Background Brief. Bangkok: ILO Regional Office for Asia and the Pacific. https://www.ilo.org/publications/just-transition-decent-work-and-climate-resilience-asia-and-pacific.

57 Electricity generation in potential countries of origin can often be significantly more carbon-intensive than in countries of destination. For example, a kilowatt-hour of electricity generated in India produces an average of 633 grams of CO_2, versus 385 grams in Germany (Hannah Ritchie, Pablo Rosado, and Max Roser. 2023. "Data Page: Carbon intensity of electricity generation". Our World in Data. https://ourworldindata.org/grapher/carbon-intensity-electricity). If a marginal skilled worker moved from India to Germany, they would have to work 160 percent more efficiently to have the same effect on net decarbonisation. This requires several caveats: this greater level of efficiency is very possible; a worker may be marginal in Germany, but not in India; and work conducted in India may grow total energy capacity rather than replacing high-carbon generation with low-carbon supply.

Global Skill Partnerships can be, and have been, used to support permanent or fixed-term migration to support the green transition (see Box 3). For example, Germany has developed new Global Skill Partnerships with Ecuador, Nigeria, Vietnam, and Jordan in engineering[58]; and with Ghana and Senegal in construction.[59] In addition, Australia is training Pacific Island workers in a range of vocational skills, including solar panel installation, in advance of migration (see Box 1).

Key considerations

For a Global Skill Partnership to be successful, implementers should work through several key considerations. Firstly, identify shared needs between the country of origin and destination. Secondly, establish and scale training in the country of origin. Thirdly, recognise skills and qualifications gained. Fourthly, engage employers in both countries.

Identify shared needs

A Global Skill Partnership trains participants within a dual track system, creating a predictable pipeline of skilled workers for employment at 'home' and 'away'. This requires identifying jobs which have a skill shortage in both countries of origin and destination, and for which training can be developed and scaled to produce skilled workers within a given timeframe. Many green transition-relevant jobs meet these criteria, including electricians; climate-smart agriculture technicians; welders; heating, ventilation, and cooling (HVAC) technicians; and roofers. Given that a Global Skill Partnership may not deliver skilled workers for two to three years, shortages should ideally be identified several years in advance, building off agreed-upon and reliable green industrial policies.

Establish and scale training

A Global Skill Partnership requires extensive engagement with training institutions in the country of origin, efficiently increasing training capacity and quality to a level that meets employers' needs in the country of destination. The ability of a country of origin to support the expansion of such training and maintain relevant infrastructure is a key consideration when choosing a partner country for a Global Skill Partnership. The country of destination may need to provide significant upfront investment to expand physical infrastructure, such as workspaces, and to purchase necessary technical equipment. 'Training of trainers' may also be required, including the retraining of instructors where the quality is low. Instructors' salaries may need to be supported where this is a constraint.

58 See https://www.giz.de/en/worldwide/128841.html.

59 See https://www.migrationpartnershipfacility.eu/mpf-projects/52-skills-partnerships-between-senegal-ghana-and-germany/preview.

Depending on the level of skills required, the duration of training will vary. An electrician, for example, may require two to four years of training and experience; a climate-smart agriculture technician may need less. A training curriculum will be developed and agreed before the partnership commences. This should be undertaken in collaboration with standards bodies, training systems, and employers in countries of origin and destination. Preparing the curriculum to meet employers' needs can be one of the most challenging parts of the partnership's design, but there may be existing initiatives which can be built upon.[60] For example, India's SCGJ is currently attempting to standardise training profiles for key green transition-relevant roles, such as solar panel installers (see Box 4).[61]

Recognise skills and qualifications

Participants on the 'away' track must be employable in the country of destination; any skills and qualifications gained during training should be recognised by both visa authorities and employers. This will be easiest if the training delivered in the country of origin meets the standards of the country of destination. This could be achieved through collaboration with employer associations and accreditation institutions in the country of destination; for example, co-organising training and qualifications with unions responsible for accrediting trainees. In some sectors, international standards may exist to which curricula could be aligned; for example, the Global Wind Organisation (GWO)'s training standards are used and recognised by employers across the world.[62] If other sectors, such as solar panel installation, seek to implement similar globally recognised standards as the green transition accelerates, skill recognition could become much easier.

Implementers should ensure that skill and qualification recognition is addressed from the beginning of the partnership to ensure it does not take a prohibitively long time. This was one of the reasons why a Global Skill Partnership construction pilot between Kosovo and Germany never got off the ground. The pilot's committee tried to negotiate automatic recognition for degrees from the partner training institution, but this was deemed too difficult.[63] Where automatic recognition is possible, the system is likely to be more attractive to both employers and participants.

60 Samik Adhikari et al. 2021. *A Global Skill Partnership in Construction between Nigeria and Germany*. Center for Global Development (CGD) Case Study. Washington, D.C.: CGD. https://www.cgdev.org/publication/global-skill-partnership-construction-between-nigeria-and-germany.

61 Akanksha Tyagi et al. 2021. *India's Expanding Clean Energy Workforce*. New Delhi: Council on Energy, Environment, and Water (CEEW), Natural Resources Defense Council (NRDC), and Skill Council for Green Jobs (SCGJ). https://www.ceew.in/publications/indias-expanding-clean-energy-workforce.

62 Andrea Scassola et al. 2022. *Global Wind Workforce Outlook, 2022-2026*. Brussels and Copenhagen: Global Wind Energy Council (GWEC) and Global Wind Organisation (GWO). https://gwec.net/wp-content/uploads/2022/09/GWEC-GWO-Global-Wind-Workforce-Outlook-2022-2026-1.pdf.

63 Adhikari et al., *A Global Skill Partnership in Construction*, 2021.

Engage employers

For Global Skill Partnerships to be successful, they must be able to place participants with employers. Employers should therefore be engaged early in the planning process, ensuring that the partnership is adapted to their expected skill shortages and qualification needs. Many employers, especially small- and medium-sized employers (SMEs), may need significant guidance and ongoing support in navigating the visa process and integrating participants.[64]

Ultimately, employers who benefit from skilled labour produced through a Global Skill Partnership should financially support the operations of the programme. In Kosovo, for example, the private Heimerer College offers a dual track bachelor's degree in nursing, in which the 'away' track trains to German curriculum requirements. From 2010–2019, around 630 students were trained under the 'away' track and half were ultimately placed in Germany; placement fees were paid by German employers.[65] It is likely that a Global Skill Partnership will need to be financially supported by other sources (such as official development assistance (ODA)) in the pilot phase, to prove its usefulness to employers at scale and therefore engender support for sharing the costs.[66]

Employers will, however, need an attractive balance of risk and reward. This is especially pertinent for SMEs; in many green transition-relevant sectors, such as HVAC installation or building retrofitting, SMEs comprise the majority of possible employers. They have limited experience of international recruitment and may operate with tight margins: it is crucial that costs and outcomes are predictable.[67] Innovative cost- or risk-sharing mechanisms, such as pooling funds, may be necessary for such employers to engage. These new financing models require further development and testing.

64 Jean-Christophe Dumont and Jonathan Chaloff. 2024. *Engaging with Employers in Skills Mobility Partnerships*. Business Advisory Group paper for the 14th GFMD Summit. Geneva: Business Advisory Group on Migration (IOE). https://www.oecd.org/migration/mig/Engaging-with-Employers-in-Skills-Mobility-Partnerships.pdf.

65 Michael Sauer and Jurica Volarević. 2021. *Transnational Skills and Mobility Partnerships (TSMP): Contextual factors, conceptual design and application*. Berlin: Bertelsmann Stiftung. https://www.bertelsmann-stiftung.de/fileadmin/files/Projekte/Migration_fair_gestalten/IB_Studie_tQMP_Sauer_Volarevic_2021_en.pdf.

66 Dempster et al., *Financing Legal Labor Migration Pathways*, 2022.

67 Dumont and Chaloff, *Engaging with Employers*, 2024.

BOX 3. A green-skilled Global Skill Partnership between Europe and Africa

By 2050, the working-age population of the European Union (EU) is expected to have reduced by 25 million people.[68] By contrast, several countries in Africa will enjoy a demographic boom, creating great possibilities for collaboration on training and migration.[69]

Some green-skilled Global Skill Partnerships have already been undertaken between European and African countries. For example, some components of the 'Towards a Holistic Approach to Labour Migration' (THAMM) project are Global Skill Partnerships.[70] In one component between Tunisia, Morocco, and Belgium, 138 young people were trained as network technicians or industrial maintenance technicians and 109 brought to Belgium (as of May 2024).[71] In another between Egypt, Morocco, Tunisia, and Germany, 697 candidates have been provided with pre-departure training and 454 candidates placed with German employers (as of April 2024). Programme participants were trained in a range of sectors, including electronics, construction, heating and air conditioning, metalwork, and hospitality, and were also provided with language and cultural integration training.[72] THAMM has recently been extended for a second phase. Several projects, including the 'Inspire' programme, have started to be explicitly targeted toward green transition-relevant occupations: several more programmes currently under development by Germany will provide new knowledge in this area.[73]

Further Global Skill Partnerships could be created with countries with whom the EU has agreed Talent Partnerships, such as Egypt or Pakistan. These programmes can be pooled across countries of destination, as in the case of the THAMM project: this reduces operational costs, risks, and allows for greater economies of scale, but also opens employers up to competition. Beyond Talent Partnerships, European countries could target countries of origin which are: (1) actively phasing down fossil fuel use and developing a green economy; (2) have existing training institutions which can be invested in; and (3) are experiencing large demographic pressures that may lead to irregular migration in future.

68 European Commission. 2024. *2024 Ageing Report: Economic and Budgetary Projections for the EU Member States (2022–2070)*. Institutional Paper 279. Brussels: Directorate-General for Economic and Financial Affairs. https://economy-finance.ec.europa.eu/publications/2024-ageing-report-economic-and-budgetary-projections-eu-member-states-2022-2070_en.

69 Charles Kenny and George Yang. 2021. *Can Africa Help Europe Avoid Its Looming Aging Crisis?* Center for Global Development (CGD) Working Paper 584. Washington, D.C.: CGD. https://www.cgdev.org/publication/can-africa-help-europe-avoid-looming-aging-crisis.

70 THAMM is supported by the EU and Germany's Federal Ministry of Economic Cooperation and Development (BMZ). It is implemented by GIZ; the French Office for Immigration and Integration (OFII); the ILO, and the International Organization for Migration (IOM). See https://migrationnetwork.un.org/projects/thamm-towards-holistic-approach-labour-migration-governance-and-labour-mobility-north; and Center for Global Development (CGD). 2021. "Towards a Holistic Approach to Labour Migration Governance and Labour Mobility in North Africa (THAMM)". https://gsp.cgdev.org/legalpathway/towards-a-holistic-approach-to-labour-migration-governance-and-labour-mobility-in-north-africa-thamm/.

71 Correspondence with programme managers.

72 Correspondence with programme managers.

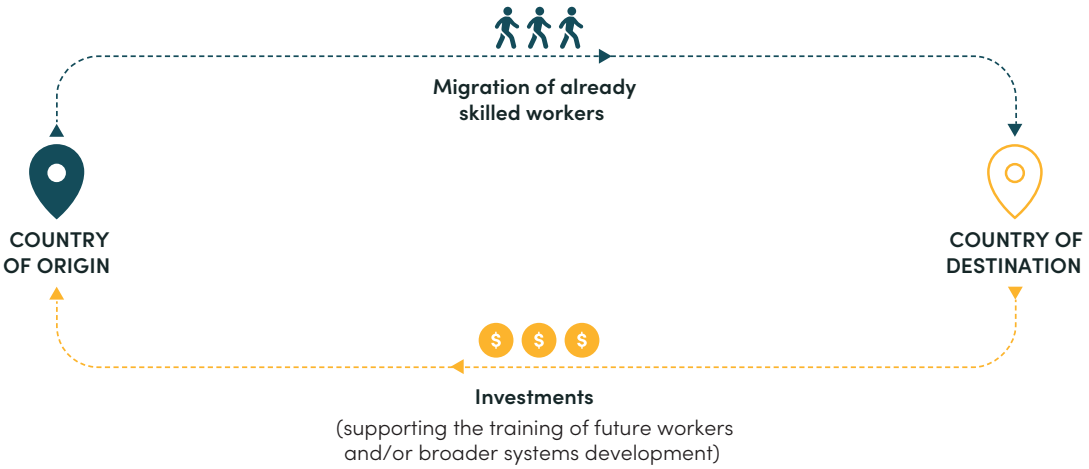
73 International Centre for Migration Policy Development (ICMPD). 2022. *Incubating Skills Partnerships Beneficial to Migrants, Countries of Origin and Destination*. Brussels: ICMPD. https://www.icmpd.org/file/download/56877/file/Inspire_Project%2520Flyer_EN_WEB.pdf.

Parallel investments

There is a third migration model which could be pursued, in which the country of destination expands the migration of *already skilled* workers alongside providing investments to the country of origin to support the training of future workers and/or broader systems development (Figure 3). This model could be applied to support either temporary or permanent migration, depending on labour needs and political constraints. It is essentially a looser version of the Global Skill Partnership model, thereby potentially more easily allowing for scale. However, careful attention must be paid to ensure that the agreed-upon investments are realised and that the partnership does contribute to economic development in the country of origin.

We see this model applied in contexts in which a Global Skill Partnership would not be applicable. This could be because it would be too difficult or expensive to establish and/or where the skill needs in the country of origin and destination are not aligned. It has the greatest potential when the country of destination has pressing skill shortages in the immediate term and is willing to provide equitable investment support in recognition of the benefits of migrating workers; and when the country of origin has investment needs, including non-workforce needs, requiring support from the partner country of destination.

FIGURE 3. The parallel investments migration model



Applying the parallel investments model to the green transition

There are three specific contexts for which parallel investments would be the most relevant migration model:

1. **To meet pressing skill shortages in countries of destination.** This model allows the country of destination to acquire *already skilled talent now*, meeting skill shortages and contributing to decarbonisation targets. By contrast, obtaining skilled workers through a Global Skill Partnership would likely take two to three years.

2. **To meet pressing non-workforce needs in countries of origin.** In meeting their decarbonisation targets, some countries of origin may be constrained by other factors than the immediate lack of a skilled workforce. They may have a current surplus of necessary workers; face other more pressing challenges (e.g. access to technology or capacity-building) for which outside support would be beneficial; or be willing to accept a loss of skilled workers *now* to gain a larger number of skilled workers in the future following external support for scaled-up training.
3. **To simplify migration procedures.** A formal Global Skill Partnership may be too challenging, time-consuming, or expensive to organise. It may also not be appropriate, given the skill needs in the countries of origin and destination.

However, we would stress that if the parallel investments model is to have the desired economic development and carbon reduction benefits, it should contribute more to countries of origin than remittances. Substantial investments should be provided (potentially on an agreed per-migrant basis) to the country of origin to support their own priorities.[74] Ideally, at least a portion of these investments should be provided to support the provision of additional training—increasing the total workforce—but some could also be provided in other green transition-relevant areas.

Key considerations

For the parallel investments model to be successful, governments in countries of destination should work through several key considerations. Firstly, whether to explicitly link the investments with migration. Secondly, to identify priorities for investment. Thirdly, to collaborate closely with the country of origin.

Whether to explicitly link the investments with migration

In the parallel investments model, the country of destination would provide agreed-upon support to the country of origin, de facto in exchange for skilled workers. Both the support and migration could be explicitly 'linked' within a bilateral labour agreement (BLA) or memorandum of understanding (MoU). They could even be linked on a per-migrant basis: the United Kingdom's (UK) Minister for International Development, for example, has previously argued that for each healthcare worker recruited, the UK should commit to training two more.[75] Alternatively, they could be 'unlinked', with

74 The implementation of such a fund would require careful design and coordination, such as the mechanisms by which payments would be triggered. Currently, renewable funds supporting migration are most frequently replenished by migrants' contributions (see e.g., Satish Chand, Michael Clemens, and Helen Dempster. 2022. "Wage arbitrage through skilled emigration: Evidence from the Pacific Islands". *Asia & the Pacific Policy Studies*, 9(3): 430–446. https://doi.org/10.1002/app5.355). In our proposed model, funds could be replenished through employer contributions or, given the legal obligations to and positive externalities of the green transition, by the government of the country of destination.

75 Andrew Mitchell. 2021. "Doctors and Nurses (Developing Countries) Bill: Private Members' Bill (under the Ten Minute Rule)". London: UK Parliament. https://bills.parliament.uk/bills/2804.

the migration agreement legally independent from investments. This would provide more freedom in *how* the investments are provided (e.g., by increasing a country of origin's ODA allocation).[76]

In both cases, there is the risk that the country of destination negotiates a detailed and structured migration component (which is followed through on) but a vague investment component (which is not). Regardless of whether the investments are explicitly linked with migration or not, both the investment and migration components should have clear timeframes and expectations established. The country of destination should follow through on the investments provided, and monitor the impact of their investments to avoid undue harm and maximise economic benefits.

Identify priorities for investment

The nature of the parallel investment is of paramount importance to the success of this migration model. It should be identified through widespread consultation among different ministries within the country of origin, as well as employers, training institutions, and trade unions. While some of the investment could go towards addressing other green transition bottlenecks (for example, technology or subsidies), it is essential that support for training is not crowded out. There is evidence that skill development is under-prioritised within existing climate finance provisions: for example, only one percent of South Africa's Just Energy Transition Partnership (JET-P) is earmarked for skill development, despite pressing skill needs.[77] In the case of South Africa's JET-P, financing appears to be earmarked for more immediately visible initiatives, possibly due to political incentives. Countries of destination should mitigate against this, and monitor the impact of their investments to ensure they are used for the purposes agreed.

Collaborate closely with the country of origin

The parallel investments migration model provides more scope for scale than others addressed in this paper. A country of destination could open a visa pathway for, say, 10,000 skilled workers, alongside a parallel investment. For that reason, it is imperative that the country of destination collaborate closely with actors in the country of origin to manage this emigration. The country of

76 For example, the UK signed a BLA with Kenya on healthcare workforce collaboration in 2021. The Kenyan government agreed to supply work-ready healthcare professionals to the UK, in exchange for capacity-building and bilateral exchanges on best practice. Since the agreement was signed, the UK has announced £15 million in funding to strengthen the health workforces of Kenya, Nigeria, and Ghana. While they are not explicitly linked, internal conversations with the UK Government suggest they are seen as a package of support and engagement. See https://www.gov.uk/government/publications/bilateral-agreement-between-the-uk-and-kenya-on-healthcare-workforce-collaboration; and https://www.gov.uk/government/news/15-million-funding-to-strengthen-health-workforce-in-kenya-nigeria-and-ghana.

77 Angeli Mehta. 2023. "The Reskilling Challenge: How Can We Leave No One behind in the Energy Transition?" *Reuters*. April 26, 2023. https://www.reuters.com/business/sustainable-business/reskilling-challenge-how-can-we-leave-no-one-behind-energy-transition-2023-04-26/; Presidential Climate Commission. 2023. *A Critical Appraisal of South Africa's Just Energy Transition Investment Plan 2: a Critical Appraisal of South Africa's JET-IP*. Saxonwold: Presidential Climate Commission. https://pccommissionflow.imgix.net/uploads/images/PCC-analysis-and-recommenations-on-the-JET-IP-May-2023.pdf; and Huckstep and Dempster, *Meeting Skill Needs for the Global Green Transition*, 2024.

origin should develop robust migration management policies and structures, ideally including support for their diaspora overseas, in order to safeguard against any exploitation and abuse. The country of destination could support with building these policies and structures, developing a more robust approach to emigration for development. In doing so, the country of destination could develop systems to monitor this emigration, ensuring that it does not threaten the green transition in the country of origin.

BOX 4. Green-skilled migration between India and Germany

India's Skill Council for Green Jobs (SCGJ) has managed a long-running and successful programme—'Suryamitra'—providing solar panel installation skills, training over 70,000 people from 2016–2022.[78] In 2022, the programme cost the Indian government US$344 per graduate, rising to US$748 if including 90 days of accommodation in a major city.[79] Yet the programme's success has led to difficulties matching participants with employers, especially when installation demand slowed during COVID-19.[80] Germany, by contrast, must recruit 100,000 solar PV workers by 2030.[81] This is challenging, given that there is a broader deficit of over 200,000 workers in its regulated craft sectors (which include electrical and metalwork trades; construction; and woodcrafts).[82]

In May 2023, an agreement was announced between the German solar association Bundesverband Solarwirtschaft (BSW) and the SCGJ.[83] Under this new agreement, it is expected that 2,000 Indian skilled solar panel installers will move to Germany. It is managed as a business-to-business programme between BSW and the SCGJ, but is facilitated by the Bundesministerium für Wirtschaft und Klimaschutz (BMWK)'s 'Hand in Hand for International Talents' programme.[84] This is a new form of initiative for German employers; as of 2022, only 17 percent of all companies had attempted international recruitment.[85]

78 Anuradha Nagaraj. 2022. "India's Solar Skills Training Falls Flat, as Jobs in Short Supply". *Reuters*. July 28, 2022. https://www.reuters.com/article/idUSL4N2YU2X6/.

79 National Institute of Solar Energy (NISE). 2022. *Expression of Interest (EOI) of Suryamitra Skill Development Program for FY 2021-22*. New Delhi: NISE. https://skillspedia.in/wp-content/uploads/2022/04/SKILLSPEDIA-EOI-SURYAMITRA-NISE-2021-22.pdf.

80 Akanksha Tyagi, Sharayu Shejale, and Neeraj Kuldeep. 2022. "Upgrading Suryamitra Skill Development Programme". New Delhi: Council on Energy, Environment and Water (CEEW). https://www.ceew.in/sites/default/files/ceew-upgrading-suryamitra-skill-dev-programme-report.pdf.

81 Jessica Bateman. 2023. "Germany needs 100,000 extra workers to meet its solar power targets—association". *Clean Energy Wire*. June 15, 2023. https://www.cleanenergywire.org/news/germany-needs-100000-extra-workers-meet-its-solar-power-targets-association.

82 Kompetenzzentrum Fachkräftesicherung (KOFA). 2022. "Energie Aus Wind Und Sonne". Berlin: KOFA. https://www.kofa.de/daten-und-fakten/studien/energie-aus-wind-und-sonne/.

83 Simon Yuen. 2023. "BMWK Urged by German Solar Sector to Implement More Measures for PV Goals". *PV Tech*. May 19, 2023. https://www.pv-tech.org/bmwk-urged-by-german-solar-sector-toimplement-more-measures-for-pv-goals.

84 Simon Yuen. 2023. "BSW Inks Deal to Integrate Indian Workers into German Solar Industry". *PV Tech*. February 27, 2023. https://www.pv-tech.org/bsw-inks-deal-to-integrate-indian-workersinto-german-solar-industry/.

85 Susanne Schultz. 2022. *Fachkräftemigrationsmonitor 2022 Fachkräfteengpässe von Unternehmen in Deutschland, Trends Und Potenziale Zum Zuzug Ausländischer Fachkräfte*. Berlin: Bertelsmann Stiftung. https://www.bertelsmann-stiftung.de/fileadmin/files/Projekte/Migration_fair_gestalten/Fachkraeftemigrationsmonitor_2022.pdf.

The 'Suryamitra' programme has been supported by Germany's international development agency Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) since 2015. GIZ has supported the 'training of trainers', including in international installation best practice.[86] This was part of a wider programme supporting India's rooftop solar panel installation goals.[87] While this collaboration was not initially connected to migration, it provided German actors with an in-depth knowledge of India's training infrastructure; increased training capacity and quality; and ensured that when a migration agreement was ultimately agreed, it was equitable. Other countries of destination could follow a similar approach in partnering with possible countries of origin, potentially under the framework of a JET-P.

Overarching considerations

Regardless of the migration option chosen, there are a number of overarching considerations that must be explored in the design stage. Seven of these are detailed below, but this list is not exhaustive and other considerations will undoubtedly arise.

Target countries

In selecting a partner country or countries, there are a number of considerations that may be taken into account. Firstly, existing foreign policy ties. This may include the existence of employment-based visa schemes that allow for a flow of skilled migrants from the country of origin to the country of destination; as well as inter-ministerial cooperation and a history of engagement at the government-to-government level. It could also include wider relationships such as between employers (or even branches of the same multinational company), worker associations, trade unions, and diaspora groups. Secondly, strong labour laws. It is imperative for migrant rights to be upheld within any new green-skilled migration partnership. Therefore selecting countries that have a history of and/or willingness to protect their citizens abroad is important. This may depend on the political and/or economic stability of the partner country. Thirdly, existing migratory pressure. It may be useful to target countries of origin that already have large diaspora populations in the country of destination or are growing in terms of a prominent source country for skilled migrants. This makes it easier to 'sell' the importance of the partnership to stakeholders on both sides, as the

86 Tatjana Mauthofer, Fabian Schuster, and Sameer Maithel. 2022. *Central project evaluation Green Energy Corridors—Grid Integration of Renewable Energy and Demand-side Energy Efficiency, India Project number 2014.2298.9.* Bonn: GIZ. https://www.oecd.org/derec/germany/giz2022-0338en-projectevaluation-green-energy-corridors-india.pdf.

87 See e.g., Sarah Stadler. 2020. *Indo-German Programme for Vocational Education and Training Promoting Cooperative Skill Development*. New Delhi: GIZ. https://www.giz.de/en/downloads/Promoting%20Cooperative%20Skill%20Development_%20A%20Cluster%20Approach.pdf.

demand is clearly present and benefits of re-routing migration through a BLA more evident.[88] Finally, existing cultural linkages. Similarities in languages spoken and educational systems will make it easier and cheaper to train and recruit skilled migrants that can integrate into the country of destination.

Target populations

New partnerships will also need to select those populations that they plan to target for engagement. As discussed above, the precise skill level and sectoral experience will differ depending on the model chosen. However, partnerships will need to choose whether they plan to stay 'open' to anyone who meets this criteria, or restrict selection in some way. Three options have been explored by other, existing, partnerships. Firstly, gender. Some put in place a gender quota, aiming to encourage a certain percentage of women to undertake training and/or migration. This is often done to encourage more female participation within male-dominated sectors, a concern of particular importance to green-transition related industries.[89] Secondly, the unemployed. Some have deliberately only offered migration opportunities to those who are unemployed within the country of origin.[90] This is done due to a concern that attracting *already employed* workers would raise concerns about brain drain. Finally, those otherwise disadvantaged. This could include targeting those within rural areas,[91] minority groups, and/or refugees.[92]

88 An important caveat here. There is much discussion about the role that new legal labour migration pathways could play in reducing irregular migration. However, the new pathway would need to be of sufficient scale and well-targeted to have any such impact, and other factors (such as border enforcement) also play a role. For more, please see Rachel Cooper (2019) *Legal Pathways' Effect on Irregular Migration*. Birmingham: Governance and Social Development Resource Centre (GSDRC). https://gsdrc.org/publications/legal-pathways-effects-on-irregular-migration/.

89 Globally, women make up only 32 percent of the renewable energy workforce. See International Renewable Energy Agency (IRENA). 2019. *Renewable Energy: A Gender Perspective*. Abu Dhabi: IRENA. https://www.irena.org/publications/2019/Jan/Renewable-Energy-A-Gender-Perspective.

90 For example, the Belgian Development Agency's 'PALIM' project aimed to encourage the migration of unemployed Moroccans. See https://gsp.cgdev.org/2021/06/30/pilot-project-addressing-labour-shortages-through-innovative-labour-migration-models-palim/.

91 In low-income countries, people actively preparing to emigrate tend to be richer and more educated than their peers. This suggests that migration opportunities are largely open to people who have the ability to afford to move, and skills they could apply in international labour markets. Targeting people who *do not* have these means (particularly those who do not live in cities) could provide them with a greater potential income differential and their families with resources to contribute to, among other things, climate adaptation. See Michael Clemens and Mariapia Mendola (2020). *Migration from Developing Countries: Selection, Income Elasticity, and Simpson's Paradox*. Center for Global Development (CGD) Working Paper 539. Washington D.C.: CGD. https://www.cgdev.org/publication/migration-developing-countries-selection-income-elasticity-and-simpsons-paradox; and Gaurav Khanna, Dean Yang, and Caroline Theoharides (2020) "Beyond Remittances: How Migrant Wages Help Communities Back Home." Center for Global Development (CGD) Blog. November 24, 2020. https://www.cgdev.org/blog/beyond-remittances-how-migrant-wages-help-communities-back-home.

92 There is currently an interesting trend towards offering 'complementary pathways', enabling refugees to access traditional labour migration pathways. For more details on how complementary pathways could be developed within the green-skilled migration space, please see box 11 of Huckstep and Dempster, *Meeting Skill Needs for the Global Green Transition*, 2024.

Stakeholders

One of the most critical factors dictating the success of any green-skilled migration partnership is whether all of the relevant stakeholders are consulted and bought in from the beginning. Ideally, any new partnership would involve the following stakeholders in countries of origin and destination: employers; public and private employment agencies; government ministries (e.g., labour, interior, development, and climate); state-level authorities; diaspora organisations; integration and migration authorities; trade unions; migrant rights associations; and academics. A detailed stakeholder map could be created, with stakeholders consulted individually and collectively on the design of the partnership. Employers, upon whom the success of the partnership is directly contingent, are often the hardest to bring on board. Partnerships should explicitly respond to their needs, and they should be involved throughout the design in order to reassure them of the pipeline's predictability and reliability.[93] Such consultations are, of course, time-consuming, yet necessary to build trust and confidence.

Qualification recognition

Any new green-skilled migration partnership will likely need to include some form of skills and qualification recognition. This could entail recognising existing skills and qualifications as prerequisites for applying for a new partnership (e.g., a circular migration model that is open to trainees) and/or developing a mutual recognition agreement to enable people trained through a new partnership to access the country of destination (this is especially relevant for the Global Skill Partnership model). There is a vast network of organisations and resources that exist to support these processes. For example, the ENIC-NARIC network cooperates on the academic recognition of qualifications in 55 countries, while also offering services such as research on the qualifications offered by foreign universities and training institutions.[94] Note that while it is relatively easy to recognise and standardise academic qualifications, it is much harder to do so for qualifications gained through TVET and broader skills. This is very labour intensive; authorities need to have a deep understanding of the area they are addressing to be able to quantify such skills. There are efforts underway in the European context which could be learned from.[95]

Financing

There are a number of costs involved in the design and implementation of a new green-skilled migration partnership, including: training costs (which could range from a three-year degree, to a pre-departure language and cultural orientation); staffing costs; migration costs (for qualification

93 See Dumont and Chaloff, *Engaging with Employers*, 2024.

94 For more, see https://www.enic-naric.net/.

95 For example, see CEDEFOP. 2023. *European guidelines for validating non-formal and informal learning.* Brussels: CEDEFOP. https://www.cedefop.europa.eu/en/publications/3093; and European Training Foundation (ETF). 2022. *Validation of non-formal and informal learning in the EU Neighbourhood.* Brussels: ETF. https://www.etf.europa.eu/en/document-attachments/validation-non-formal-and-informal-learning-eu-neighbourhood.

recognition, visas, and airfares); living costs (including wages, housing, food, and other expenses); and return and reintegration costs (if the visa is temporary).[96] While wages are often covered by participating employers, all other costs are usually borne by a combination of employers, governments, and the migrants themselves. Often ODA is used to cover the cost of pilots, as the impact of, and trust in, the partnership is built among other stakeholders who could financially contribute in future. It is imperative that any green-skill migration partnership develop a thorough financial plan which sets out how these costs will be covered in both the pilot stage and at scale. Meeting these costs will be especially difficult for SMEs, who represent the bulk of green transition-relevant employers.[97] Part of this financial plan should include an analysis that aims to, as best as possible, set out the financial costs *and* benefits of the partnership so that stakeholders can fairly assess its merits.[98]

Evaluation

Any new green-skilled migration partnership must have a robust evaluation in place to test assumptions and provide evidence as to whether or not the partnership should be scaled. Data collection could occur in three phases. Firstly, before migration happens. A benchmarking survey could be developed for both participants (migrant and non-migrant) and employers. Ideally control groups for both would also be selected and surveyed; for example, those who applied but were not selected. Secondly, at the end of the partnership. This would ask *process* questions to inform design (e.g., integration concerns) and *impact* questions (e.g., increased earnings, remittances). Thirdly, some time after the end of the partnership's completion e.g., six or 12 months afterwards. CGD has designed such an evaluation[99] and there are good examples from other labour migration partnerships.[100] While it is hard to obtain funding and buy-in for such an evaluation, such data will: (1) inform stakeholders of the partnership's impact on migrants, employers, and wider ecosystems; (2) identify whether a pilot should be scaled; and (3) bring a wider group of stakeholders (especially politicians, policymakers, and employers) on board.

96 Dempster et al., *Financing Legal Labor Migration Pathways*, 2022.

97 In the EU, for example, 45 percent of all construction firms are micro-enterprises with nine or fewer employees. Cedefop. 2023. "The greening of the EU construction sector: Skills intelligence data insight". April 11, 2023. https://www.cedefop.europa.eu/en/data-insights/greening-eu-construction-sector#_employment_trends.

98 For a good example of a labour migration pathway cost-benefit analysis, please see Digital Explorers. 2022. "Multifaceted Impact: Digital Explorers' Value for Money Assessment". https://drive.google.com/file/d/1ebuX0--xCER7LhJKcn6i4MNSS5jFZxmN/view. For more information on how to measure the costs and benefits of labour migration, please see Cecilia Navarra and Meenakshi Fernandes. 2021. *Legal migration policy and law: European added value assessment*. Brussels: Directorate-General for Parliamentary Research Services (EPRS), European Parliament. https://www.europarl.europa.eu/thinktank/en/document/EPRS_STU(2021)694211.

99 Please see https://gsp.cgdev.org/learn-more/#how-to-evaluate-it.

100 In particular, the APTC has conducted trainee and employer surveys (https://www.aptc.edu.au/publications) and New Zealand's Recognised Seasonal Employer Scheme (RSE) has conducted employer and impact studies (https://www.immigration.govt.nz/about-us/research-and-statistics/research-reports/recognised-seasonal-employer-rse-scheme).

Managing expectations

Finally, it is imperative that all stakeholders (and those essential to the success of the partnership, such as politicians) have their expectations managed. There are three elements to this. Firstly, a new green-skilled migration partnership will likely have three—perhaps competing—goals: fill labour shortages, contribute to economic development, and reduce carbon emissions. Clarifying the ultimate goal of the partnership, and how to manage competing considerations, will be key. Secondly, designing and implementing a new migration partnership is complex. It may be years between early discussions and the first migrants arriving in the country of destination. Ensuring all stakeholders, especially employers who are feeling the pressure of green transition-related targets, understand this process and are kept up-to-date with implementation is crucial. Finally, both the green transition and labour migration are publicly and politically sensitive issues for many countries. Many politicians are able to 'sell' the green transition to their citizens due to its job creation potential.[101] This narrative may be undermined if it is migrants, and not citizens, who will meet this potential. It is therefore necessary to develop a narrative on the partnership for public discussion, and be prepared to discuss the benefits and costs, emphasising migration's potential as a complement to, rather than replacement of, the domestic workforce.

A guide to the options

In this paper, we explored three different options which pair migration with training to support the green transition: fixed-term migration; the Global Skill Partnership; and migration with parallel investments. They were chosen as they best fit the green transition-relevant labour market needs of countries of origin and destination. When selecting a model, policymakers should be guided by the key questions set out in Table 1 below, which summarises the paper to this point.

The guide is, of course, simplistic; it will not provide policymakers with the 'right' answer, but will hopefully support them in choosing a model which can then be adapted to their own circumstances and constraints. Indeed, models could be pursued simultaneously, each tailored to the unique needs of different industries. An ideal model would maximise economic development benefits (including increasing the stock of green-skilled workers globally; remittances; and the skills and experience of participants); while reducing carbon emissions, exploitation, and abuse.

101 For example, U.S. President Joe Biden recently tied his energy investments to job creation. See https://www.scientificamerican.com/article/bidens-state-of-the-union-promises-big-job-gains-from-clean-energy-policy/; and Robert Armstrong and Ethan Wu. 2024. "Dani Rodrik: doing industrial policy right". *Financial Times*. February 9, 2024. https://www.ft.com/content/34872d9a-3587-4b27-a01d-2905f8e23408.

TABLE 1. Migration models to support the green transition

	Fixed-Term Migration Model		Global Skill Partnership Model	Parallel Investments Model
	Temporary Worker	Trainee		
What is the primary goal of the partnership?	Fill skill gaps in the country of destination	Promote global skill gain	Promote global skill gain	Fill skill gaps in the country of destination
What is the secondary goal of the partnership?	Promote global skill gain	Support business development in the country of origin	Invest in systems strengthening in the country of origin	Invest in systems strengthening in the country of origin
What skill level are the shortages in the country of destination?	Low-, mid-, or high-skill	Mid- or high-skill	Mid- or high-skill	Low-, mid-, or high-skill
When are skilled workers required in the country of destination?	Now	N/A, or in two to three years	Two to three years	Now
How permanent are the skill shortages?	Fixed-term (temporary and/or seasonal)	Fixed-term (temporary) or permanent	Permanent	Permanent
Are the shortages shared by a potential country of origin partner?	No	Yes	Yes	Not necessarily
Is there an established pool of skilled labour in the country of origin?	Yes	No	No	Yes
What is the expected benefit to participants?	Build skills; raise capital/ remittances	Build skills	Build skills; raise capital/ remittances; pathway to citizenship	Build skills; raise capital/ remittances; pathway to citizenship
Are employers willing to invest in the training of participants?	Ideally, but not necessarily	Yes	Yes	No

There are three primary assumptions which run across the answers to all of these questions:

1. **That visa options are available in the country of destination.** Many countries of destination, such as the U.S., do not have a mid-skill permanent skilled worker visa available, constraining the type of migration model they can implement.
2. **That the political narrative supports a range of migration models.** Countries of origin and destination may prefer fixed-term migration as it can reduce the risk of 'brain drain' and can be more politically palatable than permanent migration.
3. **That there is a reliable green industrial strategy from which workforce demands can be projected.** Without this, it is much harder for employers and countries to know what type of skilled workers are needed, when, and where.

That being said, we would urge policymakers to ideally choose the model that best meets the needs of employers and of their country's green industrial strategy, *with the willingness to reduce current constraints where possible.* Decarbonisation will require the completion of an immense number of discrete tasks (such as the installation of solar panels) in a tight timeframe. Visa systems are not set in stone, and policymakers committed to mitigating climate change should amend their migration systems to attract the workers needed to carry out the necessary tasks.

Conclusion

Countries around the world have set ambitious carbon reduction targets, necessitating what is known as a 'green transition'. Yet these countries lack the skilled manpower needed to reach these targets. These green transition-relevant roles will be distributed across the pay and skill spectrum, and it may be difficult to attract domestic workers to these roles. If countries can't attract enough local workers, they may turn to opening new legal labour migration pathways. However, given that *almost all* countries have shortages of green-skilled workers, it is imperative that any migration is linked with investments in training, to increase the global stock of workers with these skills.

This paper has outlined three migration models that could be used to support green-skilled migration and training partnerships: fixed-term migration; a Global Skill Partnership; and migration with parallel investments. Within each, we provided a worked example to show how these models could be applied in practice. Our primary recommendation is that the model used should match the needs of countries of origin, countries of destination, and employers. For example, to support temporary demand and/or knowledge exchange and education, a fixed-term model is well suited. To meet predictable demand; similar skill shortages in countries of origin and destination; and streamline qualification recognition, a Global Skill Partnership is preferable. Finally, to meet skill shortages in countries of destination and more pressing needs in countries of origin, alongside simplifying migration procedures, it may be best to pursue a model which links migration with parallel investments.

Regardless of which model is implemented, it is imperative that it maximises contributions to economic development and carbon reduction. There are also several overarching considerations that should be explored, including which countries and populations to target; which stakeholders need to be involved; how to do qualification recognition; how to finance and evaluate the model; and managing expectations. Thoughts on all of these are provided in this paper. We hope both these thoughts, and the guide, will be of use to policymakers in countries of origin and destination seeking to expand green-skilled migration.