Technology Governance
Policy Challenge

Emerging Technologies for Safe, Orderly and Regular Migration

An Anthology of Briefing Notes from the
2025 Technology Governance Policy Challenge

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Introduction

It is not hyperbole to suggest that international migration represents one of the biggest governance challenges of our times. According to UN Migration (International Organization for Migration [IOM]), there were more than 300 million international migrants in 2024. Given the growing pressures stemming from climate change, violent conflict, economic inequality and population growth, scholars and practitioners are predicting that the numbers of people on the move are only going to increase in the decades to come, with estimates ranging from an additional 44 million to 113 million to 1.2 billion people who could migrate by 2050. The projected numbers, even at the low end, are staggering.

In 2019, the United Nations adopted the Global Compact for Safe, Orderly and Regular Migration. The overarching aim of the Compact— which is non-binding— is to get ahead of the curve, to set up mechanisms and processes designed to facilitate greater international cooperation. The Compact consists of 23 stand-alone yet complementary objectives. The IOM serves as the guardian of the Compact, and every four years it is tasked with convening an International Migration Review Forum, the purpose of which is to take stock of efforts to implement the agreement. The next meeting is scheduled for 2026.

It is little wonder that states are turning to new and emerging technologies to manage this incredible movement of people. In recent years there has been a proliferation of tools designed to enhance efficiency and security that include automated decision-making systems, pervasive border surveillance apparatuses, the widespread use of biometric tools and predictive modelling to track the various flows of people. Perhaps not surprisingly, scholars have been skeptical— even suspicious — of these new developments, which have been used to deter and even obstruct migration across borders. Many have argued quite persuasively that without safeguards that protect migrant privacy and human rights, these new systems threaten to reinforce both existing power dynamics and racial biases while further marginalizing migrants. Thus, the challenge for policymakers is to reconcile technological innovation with the protection of migrants' rights and dignity. This is no small task.

2025 Technology Governance Policy Challenge

In April 2025, the BSIA and the School of International Service at American University co-hosted the Second Annual Technology Governance Policy Challenge on the theme of "Emerging Technologies and Safe, Orderly and Regular Migration." The 2025 iteration included teams from New York University (NYU), University of Western Cape (UWC) and IE Madrid, as well as the BSIA and American University's School of International Service (SIS). For two days, graduate students from five different schools of international affairs and public policy from three different continents met to present their ideas about how to leverage technology in order to manage migration in the twenty-first century.

This anthology is both a celebration of their hard work and a call to action to the policy community. Each team was asked to choose one of the 23 objectives of the Compact and prepare a policy brief and decision document outlining how emerging technologies could be used to advance the objective. For example, students could choose to focus on how technologies could be used to verify travel documentation (objective 4), combat human trafficking (objectives 9 and 10), manage borders (objective 11) or

facilitate inclusion and social cohesion (objective 16). Once published, the anthology will be sent to foreign ministries in Canada, the United States, the European Union and South Africa as well as the IOM, with the aim of contributing to policy discussions in the lead-up to the 2026 International Migration Review Forum.

Some thanks are in order.

First and foremost, a huge congratulations to all of the students who participated, both in-person and online, for your thoughtful, nuanced reflections on what is a highly complex and controversial issue. Many thanks to our colleagues at UWC, NYU, IE Madrid and the International Migration Research Centre for being such enthusiastic supporters of a nascent student competition that is just in its second year. To Dean Shannon Hader and Christine Gettings of the SIS Office of International Programs at the SIS for their ongoing enthusiasm for not only the Technology Governance Challenge but also the BSIA-SIS collaboration. To Joanne Weston and Emily Ferk at the BSIA who handled all of the logistics and to Sherwood Audio for working behind the scenes to make sure the technology ran without a hitch. Thank you to our panel of judges — Anna Schwarz and Pari Karem of Reception House, Alexis Rogers of the IOM and Antonietta Elia, a lawyer based in the European Union — for being so generous with their time. Thank you to our copy editor, Carol Bonnett, and graphic designer, Allie Visser, for their work in getting this anthology to press. Last but not least, we are particularly indebted to Ana Visan, a brilliant Ph.D. candidate at the BSIA and an emerging leader in the field of technology and border management, for her outstanding mentorship of many of the teams. Ana, the Challenge would not have been such a resounding success without your leadership and dedication. Thank you.

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Embedding Transparency and Accountability in Artificial Intelligence Predictive Tools for Climate Displacement: Operationalizing the Global Compact's Objective 2(h)

Luka Holderied, Safae Irghis and Matthew Modlin

Issue

Climate change is accelerating displacement and, in response, states and intergovernmental organizations (IGOs) increasingly deploy artificial intelligence (AI)-driven forecasting tools to predict climate-related displacement to better inform action. However, without embedded transparency and accountability, these tools risk perpetuating bias, violating privacy and enabling harmful practices. To align with the Global Compact for Safe, Orderly and Regular Migration's (GCM's) Objective 2(h), the International Organization for Migration (IOM) must embed transparency and accountability into AI forecasting systems, ensuring predictive technologies support evidence-based resource allocation while respecting the rights of all migrants.

Background

Climate change, environmental degradation and natural disasters are reshaping migration patterns worldwide. Climate change acts as a "threat multiplier" that exacerbates pre-existing vulnerabilities — poverty, economic inequality and political instability — which can increase the risk of conflict and displacement (Danish Refugee Council 2023). In 2022, climate disasters accounted for over half of new displacements, with nearly 60 percent of internally displaced people residing in climate-vulnerable countries — highlighting the intensified risks at the intersection of climate impacts, conflict and displacement (Siegfried 2023). In Objective 2(h) of the GCM, 164 states agreed to leverage data and analytics for foresight to address increasing climate-induced displacement, explicitly calling on states to "strengthen joint analysis and sharing of information to better map, understand, predict, and address migration movements, such as those that may result from sudden-onset and slow-onset natural disasters, the adverse effects of climate change and environmental degradation … while ensuring effective respect for and protection of the human rights of all migrants" (UN 2018). The IOM is uniquely positioned to lead on climate-related displacement with a mandate "to reduce the risks and impacts of climate change, environmental degradation, conflict and instability for communities affected by or at risk of displacement" (IOM 2025b). The IOM fulfills this mandate by using innovative tools to ensure that its interventions remain responsive to emerging needs. The IOM holds innovation, data protection and privacy rights central as outlined in their Innovation Principles, Data Governance Principles, Accountability to Affected Populations Framework (AAP) and Migration Data Strategy. The IOM's "innovation initiatives prioritize the well-being of beneficiaries, engaging them throughout the project lifecycle and

ensuring transparency and accountability in decision-making processes" (IOM 2025a) — upholding the IOM's "do no harm" approach, ensuring that solutions remain inclusive, sustainable and equitable for all.

Analysis: Risks and Opportunities of AI Forecasting Tools

States and IGOs are increasingly using AI-driven models to forecast climate-related displacement. These tools offer advantages in processing high-dimensional, multimodal migration data — such as satellite imagery, mobility flows and environmental indicators — as envisioned in initiatives such as the European Commission's Destination Earth (European Centre for Medium-Range Weather Forecasts 2024). The IOM, by leveraging its global data infrastructure, convening power and leadership in initiatives like the Big Data for Migration Alliance, is positioned to provide a progressive and inclusive framework harnessing AI systems for climate-related displacement forecasting. However, the algorithms and data behind these AI predictive tools can operate as "black boxes" (Kosinski 2024), which is "problematic when models are used in applications that have serious impacts on people's lives" (Mitchell et al. 2019). The EUMigraTool, for example, is an AI system designed to forecast migration flows; however, claims about repurposing its predictive capabilities to criminalize migrants, undermine asylum rights and facilitate pushbacks, have been expressed by civil society (Access Now 2022). In contrast, some efforts demonstrate how to use AI predictive tools effectively and ethically through open-source methodologies — publishing model data, design and code to invite scrutiny. The UN Refugee's (UNHCR's) Project Jetson, for example, applies open-source methodologies by publishing data sources, technical specifications and code for predicting refugee movements, increasing stakeholder trust and inviting collaboration to identify biases or errors (UNHCR 2025). However, it still operates in a context where formal UN-wide guidelines on algorithmic accountability remain underdeveloped. As highlighted in the "Report on the Operational Use of AI in the UN System" (UN System Chief Executives Board for Coordination 2025), the absence of shared accountability frameworks across UN agencies risks undermining both the legitimacy and practical uptake of AI-generated outputs in field operations. Some important emerging efforts in "responsible democratization" (Mitchell et al. 2019) of AI are model cards — concise summary documents provided with AI models and outlining its intended use, data sources and performance metrics (Google 2025). While AI practitioners use this tool to advance and compare models, this approach is beneficial for all stakeholders, including policymakers, to inform decision making and prevent any intentional or unintentional harm of human rights.

Recommendations

The IOM must champion AI tools that embed transparency and accountability while providing accurate, proactive forecasts. These principles are interdependent — predictive tools cannot be accountable without transparency nor meaningfully transparent without embedded accountability mechanisms. Building on the IOM's Accountability to Affected Populations (AAP) Framework, Protection-Centered Approach, Data Protection Principles, Innovation Framework and in alignment with GCM Objective 2(h), the IOM can institutionalize rights-based and effective AI tools by prioritizing the two points below:

The IOM should integrate technical model cards and open-source methodologies into its entire AI lifecycle — from procurement to deployment. Model cards should detail the architecture, training data provenance, performance metrics (accuracy, recall, bias) and identified limitations. Applying open-source methodologies by requiring vendors to share code and data repositories, where feasible, aligns with the IOM's Innovation Framework and fosters cross-sector scrutiny as envisioned under GCM Objective 2(h).

The IOM should adapt its existing Complaints and Feedback Mechanism, aligning with its AAP Framework, to include a formal AI redress process. This should complement the existing feedback mechanism's awareness-building efforts for affected communities and other stakeholders, by incorporating technical guidance on how to identify and document algorithmic errors (for example, incorrect classification of risk levels) and insufficient mobilization of resources per predictive outputs. Affected individuals, civil society and other stakeholders should be empowered to submit a claim through existing low-barrier channels — digitally and offline — which, alongside existing processes, could additionally prompt an immediate review of the model's output and relevant details from the model card. Publicly shared audit results from this redress process would encourage continuous improvement and align with the IOM's "do no harm" principles. Additionally, formalizing this loop helps to meet commitments under GCM Objective 2(h) in safeguarding migrant rights and preserving the integrity of these tools. Embedding transparency and accountability within the IOM's AI ecosystem will solidify trust, encourage innovation and support migrants' rights in alignment with GCM Objective 2(h).

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Smart Migration Technology Policies

Jennifer Coronel, Emily Herrington, Rhyan S.P. Hioki and Annslee Perego

Issue

States have an important need to manage borders in an integrated, secure and coordinated manner as identified by the Global Compact for Migration's Objective Eleven for safe, orderly and regular migration. To help address this issue, efficiency at borders must be increased, especially for migrants seeking employment in host countries. Technology can be implemented to build border-crossing supply chain resilience and match migrants based on host country sectoral needs with appropriate ethical considerations.

Background

Issue Analysis

As one of the most pressing global challenges of the twenty-first century, migration must be evaluated with humanitarian and efficiency considerations. In 2024, the number of migrants worldwide rose to 304 million, representing 3.7 percent of the global population (UN n.d.). With increasing geopolitical conflicts, climate-induced displacement and economic instability, millions of individuals are on the move each year, seeking safety and better opportunities. The political landscape around migration has become particularly polarized, with protectionist movements often advocating for restrictive border controls while others emphasize humanitarian considerations. Economically, borders provide a mutually beneficial gateway for national economic growth and immigrant opportunities. As Linda Cottone (2025) notes, the rapid rise in AI applications for migration control brings both unprecedented opportunities and risks, especially regarding the management of irregular migration flows and protection of vulnerable populations. This reinforces the need for human-centered, predictive AI systems that uphold international legal standards while facilitating efficient and secure migration processes.

The influx of border crossings is often unpredictable and "the system is constantly at risk of bottleneck and overcrowding" (Hinterlang 2023) which poses difficulties for effectively managing border supplies and processes (Business & Human Rights Resource Centre 2025). Often, there are inadequate humanitarian supplies and border personnel to effectively manage processing migrants. Migrants are also particularly vulnerable to abuses such as wage theft and forced labour with little to no legal remedy (ibid.). Building resiliencies into border crossings' supply chains will help to build integrated solutions that predict migration trends and proactively prepare for increases or decreases. States are incentivized to improve border supply chains because it will directly benefit states' supply chains resiliency. Migrant workers comprise a large portion of the working population in North America and EU countries, including up to 60–95 percent of the working population in some areas (ibid.).

The exponential increase of migrant populations has greatly contributed to economic and social disruption globally. The fiscal burden posed by migration on host countries due to their use of public welfare assistance and lack of labour market participation is one of the most heavily cited concerns for migration (Open Borders 2022). According to this narrative, the cost posed by migration outweighs the fiscal benefit, as migration places a large strain on government expenditure and civilian tax spending. Within the United States, the average newly arrived immigrant entering the country illegally is expected to impose an additional fiscal burden of about US$130,000 (Congressional Budget Office 2024). This large fiscal concern highlights the importance of migrant regulation and coordination. Furthermore, it is

imperative to promote a mutually beneficial relationship between host countries and migrant populations by creating a sector-based immigration framework for migrants seeking employment. This will ensure host countries benefit from migrant flows while also providing an efficient pathway for labour market participation for migrant communities. To prevent discrimination or false biases based on identity factors such as race, gender or age, this system will be based on work qualifications.

Stakeholders

Addressing the complexities of border management requires collaboration across a wide range of stakeholders operating at the national, regional and international levels. These players include national governments including their border and immigration authorities, such as the Department of Homeland Security in the United States. Private tech companies hold a stake by pushing innovation and building tools. The private sector, especially labour-intensive industries, holds an interest in border management because "immigrant workers [are] critical to the survival of many U.S. businesses…often help[ing] companies expand, creating more attractive opportunities for American workers" (American Immigration Council n.d.). Civil society, advocacy groups and migrant communities are also important stakeholders that should have a voice in these discussions about secure borders, safe migration and technology implementation.

Obstacles

Responding to border issues presents obstacles, because implementing integrated border management requires balancing several competing priorities and evolving challenges. Nations must navigate the tension between security objectives and the facilitation of legitimate cross-border movement, while deploying advanced technologies that enhance capabilities but raise privacy concerns. Regional cooperation has become essential, particularly in areas with porous borders, although this necessitates careful coordination between sovereign states with potentially divergent interests (IOM 2019). The protection of migrants' rights remains a fundamental consideration, ensuring that measures don't override humanitarian obligations or access to asylum procedures (United Nations High Commissioner for Human Rights 2014).

Policy Analysis

The overarching issues include promoting supply chain resilience and building pathways for effective migration while balancing ethical concerns. Artificial Intelligence (AI), is "technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy" (What Is Artificial Intelligence (AI)?, 2024). The following three AI policies would help to achieve these goals. Together, they would help promote safe, orderly and regular migration. The first policy is focused on creating more efficient border processes through building resilient supply chains. The second policy creates a mutually beneficial relationship between states and migrants through a system that allows feasible and sustainable paths for immigration that fill states' sectoral needs. Finally, both policies include a checks and balances system to prevent unintended harms from implementing AI, such as bias and hallucination. Implementing these three policies will create a holistic approach to promote safe, orderly and regular migration as a result of improving efficiency at borders, providing accessible pathways for immigration, and balancing accountability and transparency.

Viewing borders as an industry in need of a resilient supply chain, AI could be implemented to predict immigration trends, create suggestions for resource management, alert governments to the likelihood of immigrant abuse and create real-time reports of needed resources at borders. This technology could be similar to Tradeverifyd, a company that uses AI to help ensure supply chain resilience through "combin[ing] AI agents, real-time monitoring, and predictive analytics to provide enterprises with actionable insights," to evaluate risks and predict disruptions (Tradeverifyd n.d.). A similar AI technology that is human-centric should be applied to borders. This technology would rely on open-source information, and it could be easily implemented worldwide as the AI could be tailored to understand the specific needs and cultures of various regions. The predictive tooling should be limited in time, allowing prediction of supply issues, but not predicting far enough into the future for states to implement anti-immigration policies (Snider n.d.).

A large-scale applicant tracking system (ATS) would allow host countries to strategically admit migrants based on sector-based needs and in-demand skill sets. The ATS would promote domestic sector prosperity and increase migrant participation within the labour markets. Admitting migrants based on a sector deficiency allows countries to leverage migration, thereby increasing technological innovation and migration efficiency. The ATS system would allow migrants who seek sector-based employment to participate as an equal economic counterpart to native-born citizens by contributing to the domestic labour market.

This would create a mutually beneficial exchange between migrants and host countries as migrants would be able to fill host countries' sector-based needs. Additionally, sector-based employment allows migrants to assume ownership in the process. Similar frameworks such as Australia's and Canada's point-based system use qualification factors such as age, education and language skills to admit migrants (Australian Department of Home Affairs 2019; Government of Canada 2019).

The International Organization for Migration (IOM) hosts a global platform offering real-time migration data analytics. This system is a prototype for predictive AI-based tools in understanding flows and guiding policy interventions. If implemented, this system has the potential to be very helpful for countries and organizations to increase migration efficiency. Cooperating with the IOM will allow for greater coordination and information sharing capabilities. Differing from current systems, the ATS will rank and match migrants with host countries based on host country sector availability.

While these AI policies will increase the implementation of technology for border management, there has been little implementation of transparency, audibility and documentation of these algorithms. Since 2017, US Customs and Border Patrol have implemented facial biometric screening at over 200 US airports for international travellers. While it improves identity verification, reports from the Georgetown Law Center on Privacy & Technology, like The Perpetual Lineup, raises concerns over racial disparities in error rates, reinforcing the need for transparent audits and safeguards. Implementing a human rights-based design requirement for these technologies would help to improve these issues.

Recommendations

Governments should implement AI technology to predict near-future migration trends and proactively prepare for an ever-changing flow of migration. This technology would allow state and private actors to proactively prepare for migrants by adequately distributing resources such as personnel and humanitarian supplies. By predicting migration trends, the AI could create suggestions for resource management and alert public and private partners to relevant needs. The AI could also highlight potential risks of immigrant abuse such as forced labour, preventing the exploitation of migrants. The AI would largely use open-source information and it would be malleable to unique country needs.

Create a two-prong AI ATS to promote sector-based migration. Prong one: create an AI ATS to generate a ranking system based on the following criteria:

- country-specific employment sector needs (ESN); and
- preset qualification assets (QA).

The AI ATS will receive, evaluate and sort migrant applications into a large-scale application system. Based on each country's specific sector needs, which each country would input based on government parameters, migrants would be ranked. Work documents, previous work permits, clearance checks, in-demand work experience documents among other items, would be sorted and ranked by the system. The AI ATS would match migrants who meet the sector qualifications, based on their overall ranking, with potential host countries.

Prong two: establish the universal sectoral migration and efficiency organization (usme), under the IOM. All member states would have access to the online database where they can input their ESN and QA to generate their systematic rankings criteria. The online database would then match migrants to countries based on their sector needs. The ATS would then generate two rankings for visa and citizenship application. The ATS system would effectively sort and rank migrant qualifications. The IOM would partner with all member states to employ an equitable system, free from gender, age or ethnic discrimination, thereby increasing migration efficiency and economic development. The USME will increase information sharing, mutual responsibility, and migration efficiency between member states, as all states will have access to employ the ATS within domestic immigration frameworks.

Implement rights-based design requirements for border technologies. Governments should establish mandatory human rights impact assessments for all border technologies, conducted by independent evaluators before procurement decisions, to be repeated annually after deployment. This requirement would ask for all used technologies to include privacy by design principles and require algorithm explainability and auditability. They should have human rights performance indicators such as an appeals success rate against automated decisions, meaning tracking the rate at which individuals successfully overturn decisions made by automated systems (for example, denied entry or flagged as a risk). There should also be a dedicated ethics unit, which would include border agency professionals and external human rights experts, to hold authority to pause deployments that violate the set standards.

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Protecting Migrant Data in an Evolving Data Landscape

Fabrice Blais-Savoie and Finnegan Hunter O'Connor

Issue

Digital identifications (IDs) are becoming ubiquitous tools for managing migration. States and international organizations need to develop robust policies that prioritize the protection of migrant data.

Background

The constant collection of data on migrants has major consequences for the mobility of people across borders and further heightens risks for vulnerable groups on the move. By utilizing powerful algorithms, state agencies can use combinations of seemingly innocuous data to create digital proxies that infer sensitive information and enable illegal forms of discrimination without the subject's knowledge. The increasing prevalence of devices for recording biometric data at borders, collection points and service providers allow these digital proxies to follow their physical doubles throughout their journey. This is further exacerbated by the current push, by both development organizations and governments, for ID digitalization, from biometric passports to fully digital profiles (World Bank Group 2022). Not only are these proxies available to state agencies in destination and transit countries, but the reliance on registries in countries of origins means that the very governments that migrants may be hoping to distance themselves from are made aware of their expatriates' movements through state-to-state communication channels.

The ways in which data is processed and disseminated challenges the already troubled concept of migrants' informed consent as the information they share for specific purposes at various points in their journey is constructed into digital proxies beyond their control, and largely without their knowledge. Our proposal is to give migrants autonomy over their data by using the International Organization for Migration (IOM) as a mediator between data collection and storage points. By filtering the essential information from these data points into binary summaries that state agencies can access, this humanitarian firewall gives migrants more control over how their data is used, while respecting states' need to access information on the people entering their borders. This approach directly works toward the achievement of the Global Compact for Safe, Orderly and Regular Migration goals 1, 3 and 4 (data, information provision and legal identity) of while also facilitating the achievement of goals 10 and 11 (eradicate trafficking and manage borders).

The Datafication of Migration

Migrants increasingly encounter forms of data collection on their journeys. In many cases, this data is intended to be used to the benefit of migrants, although it can also be deployed to assess admission. Electronic health records (e-HRs) can improve health outcomes for migrants by giving providers the necessary information to provide effective care. At the same time, information on vaccines and infectious diseases can be used to determine access (Chiesa et al. 2019). Indeed, some scholars have advocated for broadening the information captured in e-HRs to include biographical information to account for the social determinants of health (Bozorgmehr et al. 2023). Information such as ethnicity and nationality are considered sensitive under the most prominent data protection regimes such as the European Union's General Data Protection Regulation (GDPR), which extends to migrants. However,

with the increasing prevalence of advanced algorithms, even the data which is not subject to strict restrictions on use can be combined to infer information about migrants (Solove 2024). Even without any significant collection of biographical data, the increasing use of biometric technology can trace where a migrant has travelled. This "metadata" is shared freely and can be enough to draw inferences about a migrant's biographical information. The result is the creation of digital proxies that allow the restriction of mobility without a legal justification (Scheel, Ruppert and Ustek-Spilda 2019).

The discriminatory potential is heightened by the ease at which biometric data can be recorded. The European Union currently hopes to deploy an automated entry/exit system that records traveler biometric data — both face and fingerprint — linked to border-crossing and refusals history (European Commission 2025). States often share migrant data with each other through agreements such as the Biometric Data Sharing Program between the El Salvador, Guatemala, Honduras and the United States. Using real-time data exchanges, the parties share the biographical information linked to the biometric data (Flacks, Yayboke and Burke 2022). When a migrant reaches a border, their profile can be readily accessed, meaning their digital proxies follows them throughout their journey.

The ways that data can be used to draw inferences, as well as the degree to which it can be shared, calls into question the ability of migrants to provide informed consent when they are sharing specific data in a specific context. There is also a limited capacity to consent to sharing personal information as migrants transiting through or entering a new country are often navigating a legal framework, they are not familiar with, reducing their agency of when to share their data. (Lintner 2024)

Finally, to access data to verify legal documentation or assess the identity of paper-less migrants, agencies frequently request information from the migrant's country of origin (Clark, Metz, and Casher 2023). The IOM backs up the legal identities issued to migrants through its Migration Information and Data Analysis System (MIDAS), which is in turn linked to the national ID databases in that migrant's country of origin (IOM 2021). This weakness is not limited to the IOM when verifying IDs; border controls often need to notify the country of origin (for example, through an application programming interface (API) request; World Bank Group n.da). These checks allow the country of origin to track migrants' movements, posing a significant risk in the case of those fleeing persecution from the state. The lack of global interoperability and the siloed nature of digital identity systems further complicates this process and restrains alternatives (Otjacques, Hitzelberger and Feltz 2007). Furthermore, as most states have undertaken some level of "border internalization" verifying migrants' and citizens' identities throughout the year (Lyon 2013), their country of origin can track them continuously.

It is important that countries of transit and destination can verify the legal documentation provided to their border agencies and these approaches are much more appropriate than alternative profiling, such as through social media (Jumbert, Bellanova and Gellert 2018). They also have a right to control who enters their borders, if they do so with legal justification. As mentioned, inferred data, properly used, can benefit migrants by improving the services provided to them. Yet migrants also have a right to informed consent, and control over how their data is provided. Our proposal is for the IOM to mediate the collection and sharing of data to balance these interests.

Assessing the IOM's Role in Data Management

The IOM already provides a firewall through its electronic Personal Health Record (e-PHR) an online platform that allows migrant health data to be reconstructed by physicians in member countries (IOM n.d.). Data collected by the IOM is governed by the 13 principles in its "Data Protection Manual" (IOM 2010). The principles ensure that data is only collected and shared with the subject's consent and that the amount of data collected is limited to only what is strictly necessary for a specific purpose, mandating that it is destroyed/disaggregated once said purpose has been fulfilled. In this case, the IOM is explicit that the data provided through the e-PHR is only to be used in the provision of primary care. As internal regulations, the principles are technically non-binding. Although, respecting the rights of migrants constitute a core foundation of the IOM's legitimation strategy, giving it a strong reason to respect its internal commitments to that effect (Bradley and Erdilmen 2023).

It is important, however, to note the lack of legal enforceability could pose issues if data is mishandled by the IOM. Normally, the GDPR is enforced by data protection authorities (DPA). In 2024, the Hellenic DPA found the Greek government in contravention with the GDPR on its surveillance of third-country nationals and, subsequently, levied a fine and ordered compliance within three months (Hellenic Data Protection Authority 2024). While international organizations such as the IOM technically fall under the GDPR, they are not subject to DPA enforcement.

Collecting data for states already falls in the IOM's purview. A core part of its mandate is the collection of anonymized information on migrants. The organization maintains the Migration Data Portal (MDP), which provides a massive amount of data on the stock and flow of migrants. The MDP, along with the humanitarian-focused Displacement Tracking Matrix, collect massive amounts of anonymized data from partner countries, sometimes even through IOM-created techniques such as MIDAS. This data is readily available and is indeed collected for the express purpose of informing policies that seek to govern migration. The use of data by states to "govern at a distance" the movement of people has expanded alongside the securitization of migration (Scheel, Ruppert and Ustek-Spilda 2019). The IOM also provides the infrastructure for secure data sharing between governments with its electronic Readmission Case Management System.

The broader UN ecosystem is also heavily involved in digital identification initiatives. Most notably, the World Bank's ID for Development (ID4D) initiative is actively striving to achieve global coverage for digital IDs (World Bank Group n.d.b). This opens the door to cross-agency collaboration to ensure that the implementation is respectful of both migrants' and states' rights.

Recommendations

Protecting migrants' information is critical to achieving a number of the Global Compact's objectives, such as providing legal identity and documentation, reducing vulnerabilities, managing borders and eliminating discrimination, without exposing the increasing amount of data collected on them. Indeed, by subjecting migrants to unregulated collection and dissemination of their personal information, even if initially for their benefit, risks making them vulnerable to coercion and non-legal discrimination.

Create a humanitarian firewall that summarizes relevant data for context-specific requests. Built on the zero-knowledge proof approach (see Zhou et al. 2024), the IOM would provide a verification service through which states could receive binary authentication of key facts relevant to the context of their request. For example, border services could validate vaccination status or perform simple queries of a threat database. This would limit the ways in which the data associated with an ID can be used for non-legal forms of discrimination, while improving the interoperability between state repositories. It would also facilitate the IOM's current role as a provider of anonymized identity validation.

Provide standardized information packages that clearly explain how migrants' data will be processed and shared by the IOM and its partners. As a valid request must be appropriately linked to the verifier's specific need, it will be easier for migrants to exercise more autonomy on what data they are sharing. To ensure that migrants can provide informed consent, the IOM should provide them accessible information on which facts are being verified and what the system will be sharing. Furthermore, the IOM should make migrants aware of when the information they are expected to provide will be digitized and what potential verifiers will be able to access in the future.

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Bridging the Digital Divide: Gender-Responsive Tech for Migration Governance

Valdrin Dragusha, Marika Jeziorek and Varinia Salazar

Issue

While emerging technologies and devices can facilitate access to information and process migration applications, how can we ensure their use protects the rights of migrants and does not exacerbate inequalities?

Background

In an era of unprecedented human mobility, with 304 million international migrants in 2024 (3.7 percent of the world's population), 146 million of whom were women and an unknown number of 2SLGBTIQ+ migrants, with these numbers projected to rise significantly, migration governance cannot remain static (UN Department of Economic and Social Affairs [UN DESA] 2025). Current migration governance continues to be gender-blind, ignoring the way that gender shapes migration, the gendered realities and risks for women and gender-diverse migrants, which is only exacerbated by current migration governance systems utilizing emerging technologies that reinforce gender inequalities (Morokvašić 2014; Piper 2005; Hennebry 2018; Hennebry and Petrozziello 2019). Migrants often begin their journeys — or begin planning them from their countries of origin — without reliable information about rights, procedures or services. In the absence of trustworthy sources, many rely on social media such as Facebook or WhatsApp, where misinformation is rampant. Smugglers exploit these channels, spreading false claims that lead migrants to be robbed, stranded or misled about legal options (Tech Transparency Project 2022).

The consequences are serious; misinformation can result in missed deadlines, dangerous routes or legal exclusion (Pinel 2024). Even in stable countries, migrants face steep bureaucratic learning curves to access housing, health care, or jobs (Planincic and Klopp 2024; Lane and Vatanparast 2022; Preisler 2021). In Greece, asylum seekers described feeling "totally lost" on arrival (International Rescue Committee [IRC] 2020). In Canada, health outcomes among newcomers decline partly due to language and information barriers (Newbold 2006; Vang et al. 2017). Digitalization of information and misinformation is inherently gendered; there is a digital gender divide where women face greater obstacles in accessing digital technology and women have lower digital literacy than men, resulting in a differential interaction with the digital information sphere putting women at greater risk (IOM Migration, Environment and Climate Change [MECC] Division 2023; UN Refugees [UNHCR] 2023; UN Development Programme 2021).

Global Compact for Migration (GCM) Objective 3 calls on states to provide multilingual, centralized and accessible information at all stages of migration — including through digital tools (UN 2018), in alignment with UN Sustainable Development Goal 10.7. GCM Objective 7 calls on states to address and reduce vulnerabilities in migration (UN 2018). Gender and migration are intersecting factors that bi-directionally impact each other, where migration is a gendered process creating, maintaining and heightening the risks and vulnerabilities migrants face on their journey, including in their access, use or restriction of emerging technologies (IOM n.d.; Ferrant and Tuccio 2015; Mora and Piper 2021). Gender-responsiveness and a whole-of-society approach are both cross-cutting guiding principles

of the GCM; both are key to reducing inequalities in collaborative work between the most relevant stakeholders in migration governance (UN 2018).

Mobile internet, artificial intelligence (AI) and smartphones offer opportunities to scale access, and many migrants now view connectivity as a "critical survival tool" (UNHCR 2016, 5). However, a persistent digital divide remains — refugees are 50 percent less likely to own internet-enabled phones and a third have none (ibid., 8). These disparities are gendered — women migrants face lower rates of phone access and digital literacy, limiting access to life-saving information. Without inclusive, gender-responsive design, tech tools risk deepening existing inequalities.

Case Study Analysis: The Newcomer App and Comparative Platforms

The Newcomer App (Canada): This upcoming AI-powered app will offer personalized, multilingual support for migrants and international students (ValuesFirst AI n.d.). It will provide local resources, Q&A chatbots, real-time translation and human support. Still in development, it exemplifies a rights-based, user-centred digital hub aligned with GCM Objective 3. However, as with many government-adjacent platforms, long-term data governance and safeguards for gender-diverse users remain critical concerns.

Martynka (Poland): Martynka is a grassroots chatbot launched on Telegram in 2022 to support women fleeing the war in Ukraine (Martynka n.d.). Run by volunteers, it offers legal aid, psychosocial support and information in four languages. Its gender-responsive design and use of widely accessible tech show how low-cost tools can meet urgent needs. However, it also highlights vulnerabilities around data privacy, volunteer burnout and reliance on third-party platforms such as Telegram (Jeziorek 2025b; Foy et al. 2024).

Refugee.Info: Launched in 2015, Refugee.Info delivers multilingual, fact-checked information on asylum, health and legal rights (Refugee.Info n.d.). It operates through a website, Facebook page and Messenger chatbot, with interactive support from trained moderators. While impactful, it has faced funding interruptions (IRC 2020).

Cross-case Insights

Multilingual, user-centred design: All platforms aim for accessibility. Refugee.Info tailors content by language and need, Martynka's Telegram format eased adoption and The Newcomer app integrates personalization via AI. However, most lack design features specifically addressing gender, literacy or disability — except Martynka, which was explicitly built for displaced women.

Filling institutional gaps: These tools emerged where formal systems fell short — particularly during emergencies (Martynka, Refugee.Info) or fragmented services (Newcomer App).

Partnership dependence: All rely on collaboration: Refugee.Info partners with non-governmental organizations (NGOs) and UN agencies; Martynka depends on legal volunteers; and The Newcomer App works with cities and service providers.

Sustainability and adaptability: Each must evolve with user needs and policy shifts. Refugee.Info pivoted during COVID-19; Martynka is moving from emergency response to sustained service; and The Newcomer app will require ongoing updates and institutional support.

Governance Opportunities

Enhancing system efficiency. Governments and NGOs can use tech to update policies and disseminate information instantly. AI-based tools such as The Newcomer app personalize support at scale and generate data insights to improve policymaking (UN 2018).

Reaching migrants across all stages. Apps offer 24/7 access across the migration continuum. The Newcomer app integrates city and NGO input; Martynka supports users inside and outside Poland (WADI 2022); Refugee.Info updates content across EU countries. These platforms embody SDG 17's call for partnerships.

Inclusion and dignity. Design features such as translation, audio and simplified content help low-literacy and under-connected users. Apps can reduce inequalities (SDG 10) by delivering tailored information to rural, female and gender diverse, and digitally marginalized groups.

Digital platforms — if governed with care — can help fulfill GCM Objective 3 by expanding access to trusted information, improving institutional efficiency and fostering inclusive partnerships. Migrants are already users of such tools, particularly in moments of crisis. Meeting that demand with well-designed, rights-based platforms creates a meaningful opportunity for safer, more informed and more equitable migration pathways.

Governance Challenges: Risks of Digitalizing Migration Information

While digital platforms hold promise for advancing GCM Objectives 3 and 7, they also present serious governance risks. Without safeguards, technology can exacerbate exclusion, shift burdens onto migrants, and compromise rights.

Responsibility and the shift of burden. Digital tools risk shifting responsibility for integration onto migrants, while states scale back direct support. Platforms like The Newcomer app and Martynka emerged to fill urgent information and support gaps, but their success may allow governments to retreat further — promoting self-reliance over institutional responsibility (Ilcan and Rygiel 2015; Jeziorek 2025a). Migrants may be told to "use the app" instead of receiving in-person help. This burden often falls on women, who are both underserved and expected to assist others — Martynka's volunteer base is largely female (Parreñas 2015; Enloe 2014; Jeziorek 2025a).

Digital inequality and exclusion. Tech-based solutions presume access, yet many migrants lack smartphones, data or stable internet. When internet is not available, but there is public Wi-Fi, users must accept their personal information to be transmitted online; from email addresses to personal documents (i.e., ID or other private information) on their devices might be compromised (Grandi n.d.; Shahin 2017; World Bank 2023). Gender gaps widen the divide; globally, women are 19 percent less likely to use mobile internet, and in some settings, male relatives control devices (Crabtree and Obadi 2024). Poor interface design can exclude low-literacy users or linguistic minorities. Without multilingual content, offline modes or contingency planning for power outages (Leung 2010), many are left without support during emergencies.

Data privacy, surveillance and misuse. Digital platforms often collect sensitive data (for example, location, legal status, biometrics). Yet migrants rarely receive clear information on how their data is stored, shared or used. Beyond privacy, there is a risk of surveillance creep; tools designed for assistance may be repurposed for control. Government apps have used facial recognition and GPS to track asylum seekers, raising alarm over "techno-carceral" systems (Gottardo and Cooper 2024). Migrants may avoid platforms they fear are monitored, reducing uptake. Third-party technologies further complicate matters. Martynka, using Telegram, depends on a platform criticized for security weaknesses and opaque ownership (Maréchal 2018; EU Neighbours East 2024; KremlinGram n.d.). Data breaches or misuse — intentional or accidental — can expose migrants to danger. Algorithmic bias can compound harm. AI-driven tools may reflect systemic inequities or exclude underrepresented groups (Beduschi 2021; Bozdag 2013). Private companies are developing technologies, digital platforms and devices that affect migrants without human rights frameworks and protections (Castets-Renard and Fournier-Thombs 2022). Without audits, accountability mechanisms and regulations, flawed technologies may misinform users, disproportionately fail those with complex needs, deepen existing inequalities or create harm.

Sustainability and institutional integration. Many digital platforms rely on short-term grants, volunteers or crisis-driven funding. Refugee.Info's 2019 shutdown due to funding gaps shows how easily critical services can vanish (IRC 2020). Martynka also depends on NGOs and volunteers with limited capacity (MartynkaHelp 2024). Migrants may begin relying on a tool that is not guaranteed to endure or be updated. Sustainable tech governance requires integration with public infrastructure. Governments should fund or formally endorse tools like The Newcomer App to ensure they are maintained and recognized within service ecosystems. Otherwise, migrants face fragmented systems and inconsistent support. Moreover, not all needs can be met digitally. Overreliance on apps risks sidelining traditional outreach — yet some migrants will always require face-to-face support.

Recommendations

To realize GCM Objectives 3 and 7 through technology, policymakers must support digital innovation while mitigating risks. We propose five key strategies:

Publicly integrate and support digital information platforms. Governments should fund and formally adopt tools like The Newcomer app as part of their migration infrastructure. This ensures sustainability and credibility and reduces reliance on NGOs or volunteers. A "no wrong door" approach must guarantee access through both digital and offline channels. Crucially, platforms should also reach prospective migrants in countries of origin to support early, informed decision making. A digital rights charter should guide development, ensuring accessibility, non-discrimination and a clear separation from enforcement systems.

Advance digital inclusion and literacy. Tech solutions must be paired with inclusion strategies to bridge access gaps:

- **Connectivity and device access:** provide subsidized data and device libraries in migrant communities and encourage open-source development for locally adapted, globally applicable models.

- **User-friendly, multilingual design**: use icons, audio and community-informed translation. Platforms like Refugee.Info have shown how moderator-led content improves relevance.
- **Digital literacy outreach:** integrate digital training into orientation programs. Employ peer navigators from migrant communities.
- **Offline options:** develop SMS (short message service) features, printable resources and offline app functionality for areas with poor connectivity.

These measures align with SDGs 9C and 5B, reducing the "digital divide" across gender, geography and literacy.

- **Ensure data protection and privacy.** Robust governance is needed to safeguard migrant data:
- **Privacy by design:** encrypt communications, anonymize data, limit data collection to needs
- **Firewalls from enforcement:** information platforms must not share data with immigration or law enforcement.
- **Informed consent:** privacy terms should be clear, multilingual and accessible.
- **Accountability:** create independent oversight and complaint channels for data misuse.
- **Global guidance:** encourage the IOM and UNHCR to develop international standards for data ethics in migration tech.

Foster Inclusive Partnerships.

- **Public–private partnerships:** should prioritize ethics, non-commercialization and co-governance with migrant groups
- **Support grassroots innovation**: through grants and mentorship for community-led platforms.
- **Co-design and feedback:** institutionalize feedback loops with users and chief security officers to adapt features and catch emerging issues.
- **Global learning:** forums like the International Multidisciplinary Research Foundation should spotlight promising models and promote knowledge exchange across borders.

Strengthen Regulation and Ethics for Migration Tech.

- **Algorithm transparency:** platforms must disclose how AI functions, allow audits and address bias.
- **Certification models:** create voluntary standards to vet platforms for accuracy and ethics.
- **Rights education:** embed digital rights content within apps — migrants should understand their data protections and consent options.

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Strengthening Transnational Responses to Smuggling of Migrants: A Gender-responsive and Rights-based Framework

Kadambari Balasubramanian

Issue

Migrant smuggling networks are evolving rapidly, exploiting legal gaps and border weaknesses while endangering migrants — especially women and children — necessitating a coordinated, rights-based transnational response.

Background

Smuggling of Migrants: A Transnational and Escalating Crisis

Migrant smuggling has become a stamp of transnational crime in the twenty-first century due to an intricate interplay of stringent migration policies, global disparity, wars, impacts of climate change and the lack of safe and regular mobility corridors. These smuggling networks prey upon the desperation of individuals and families fleeing economic deprivation, insecurity and natural calamities, providing irregular migration routes that are high-risk and essentially lead to violence, exploitation or even death.

The criminal organizations display high levels of organization, sophistication and adaptability crossing jurisdictional boundaries into illegal trade. These migrants, particularly women, unaccompanied minors and persons with disabilities, are at risk of exploitative situations, sexual and gender-based violence and debt bondage. Cruelly, their chances of accessing justice, protection and remedies after being smuggled are faint. Here migrant smuggling, rather than just being a border security challenge, is now being transformed into an issue of human rights, good governance and rule of law, thus demanding urgent, collaborative and systemic reform.

Fragmented Legal and Policy Architecture

The global legal framework remains unevenly adopted and inconsistently enforced despite the existence of the UN Protocol against the Smuggling of Migrants by Land, Sea and Air (supplementing the UN Convention against Transnational Organized Crime [UNTOC]). With regards to the smuggling protocol, some member states have not yet ratified it; others have ratified it but have no enforcement or domestic legislation per se. Artificial intelligence- powered risk detection tools can foster shared situational awareness and early warning systems that trigger coordinated responses even in legally fragmented environments (Organisation for Economic Co-operation and Development [OECD], 2021). Blockchain-based or digitally encrypted systems for case management can ensure continuity of protection and improve inter-agency coordination, especially in cross-border movements involving inconsistent enforcement (UN High Commissioner for Refugees and World Food Programme 2022).

In certain instances where smuggling is criminalized, the definitions often become conflated with that of trafficking in persons, leading to blurred lines in enforcement and distortion of legal application. This treatment of smuggled migrants, as criminals instead of human rights holders, places them in detention, deportation or denial of

assistance, thereby contravening international human rights standards. Legal gaps exist for aggravating factors — for example, where the smuggling of minors, maritime routes or organized criminal groups are involved — where specific penalty provisions may not apply.

In many jurisdictions, the law fails to distinguish between those facilitating for profit and those giving humanitarian assistance to irregular migrants. This is creating a chilling effect on civil society actors and further reducing already limited protection space.

Weak Transnational Cooperation and Intelligence Sharing

Migrant smuggling is transnational in nature; however, many responses to it are still fragmented, siloed and reactive. There is a glaring absence of common intelligence systems among origin, transit and destination countries. Critical data regarding smuggling routes, financial flows, smugglers' identities, and migrants' vulnerabilities are not collected, analyzed or shared across jurisdictions.

Cross-border operations are often weak due to lack of trust, poor inter-agency coordination and conflicting legal mandates. Law enforcement agencies are poorly trained, underfunded and ill-equipped to proactively investigate smuggling networks' digital activities through encrypted platforms and cryptocurrency markets.

Existing data-sharing agreements are often found to lack the necessary privacy protections, giving rise to fears that data about migrants may be misused for immigration enforcement or political aims. This has resulted in an erosion of trust among migrant communities, which respond by underreporting and being less willing to engage with protective services.

Toward a Gender-responsive and Child-sensitive Operational Framework

To resolve the above gaps, there is an emerging consensus on dealing with irregular migration from victim-centred, gender-responsive and child-sensitive perspectives, where women and children experience specific types of risks such as sexual violence, family separation, trafficking and inadequate health or psychosocial care, yet they still fall under broad protocols of migration.

Rights-based operational protocols would include:

- Specialized training for border officials and law enforcement through immersive tools such as victim response-based simulations to enhance empathy and decision-making in identifying and supporting smuggled migrants.
- AI-powered migration route heat maps that apply predictive analytics and real-time data (for example, satellite imagery, incident reports) to detect high-risk corridors and enable timely deployment of humanitarian assistance and enforcement teams.
- Mobile cross-border human rights task forces embedded with child protection officers, gender experts, social workers and trauma-informed responders to screen and assist migrants at key hotspots. A strong technology governance framework that assures secure and ethical handling of sensitive data, interoperability across jurisdictions, equitable access to digital tools and human-led use of AI or predictive analytics.
- Digitally encrypted "migration passes" for vulnerable migrants, particularly women, unaccompanied minors and disabled persons, which include biometric and assistance history data accessible only by properly vetted humanitarian actors across jurisdictions, thus ensuring continuity in care and avoiding duplication.

Such innovations would thus protect, not punish, and uphold such rights across the entire migration cycle regardless of status

Legal Reforms and Harmonization across Jurisdictions

Smuggling of migrants for financial or material gain should be recognized as a crime in concordance with the UN Smuggling Protocol. Impose tougher penalties in aggravated situations, especially when death ensues while smuggling or when it involves children or disabled persons. Clearly identify the differences between migrant smuggling and human trafficking, to ensure appropriate protections and service provisions are put into place. Exempt humanitarian actors from criminal liability for giving life-saving assistance.

At the same time, frontline personnel must be trained in vulnerability screening and trauma-informed interviewing, referral protocols assisting smuggled migrants to health care, legal aid, shelter and asylum systems.

Innovations in Cooperation and Preventive Ecosystems

Legal reform, enforcement and meaningful prevention must also be intertwined with development cooperation, strategic

communication and community-based early warning systems. Actions to be considered include:

- public campaigns for information in countries of origin and transit to debunk the myth about smuggling while raising awareness about safe migration pathways;
- investing in youth employment, women's education and climate adaptation initiatives in the high-risk zones of migration; and
- combining technical training for the justice system, immigration services and law enforcement in neighbouring states, while establishing secure and privacy-aware data-sharing mechanisms to aid the work of law enforcement and dismantle organized smuggling networks.

The flexibility for cooperation to be formalized exists via bilateral agreements and regional platforms (such as the African Union, the Economic Community of West African States and the Association of Southeast Asian Nations) or at the global level through the Global Forum on Migration and Development (GFMD). These platforms can help institutionalize common standards, rapid response protocols and resource pooling.

Strategic Alignment and Key Stakeholders

This is a global commitment specified in Objective 9 of the Global Compact for Safe, Orderly and Regular Migration, calling for strengthened transnational response to migrant smuggling while protecting the human rights of migrants.

The key actors are:

- UN Office on Drugs and Crime (UNODC) (legal and enforcement standards);
- the International Criminal Police Organization (or INTERPOL) (criminal intelligence);
- International Organization for Migration (IOM) and United Nations Children's Fund (or UNICEF) (protection and humanitarian coordination);
- regional migration observatories; and
- civil society networks and diaspora organizations.

Country models worth exploring include:

• Portugal (for its rights-based border management framework): As part of its compliance with EU regulations, Portugal implemented a rights-based framework. The country conducts Data Projection Impact Assessments (DPIAs) before deploying biometric border gates and surveillance systems (European Commission 2022). This ensures the alignment of control tools with privacy laws and fundamental rights supported by tailored oversight mechanisms.

• Colombia (for regional humanitarian coordination): This framework allows migrants access to health services, job opportunities and education while facilitating a coordinated data-sharing platform among humanitarian actors without over securitization of mobility (IOM 2022; GFMD 2023).

• The Netherlands (for tech-integrated migrant monitoring): SyRI is a risk scoring system that was classified as violating privacy. The Dutch government subsequently introduced an improved mandate ensuring stricter regulatory checks and DPIAs for all high-risk artificial intelligence (AI) tools used in the governance process.

Risks and Next Steps

If states and international fora do not act decisively, smugglers will continue to adapt, operate in secrecy and take advantage of every conceivable opportunity that could lie within the law and operation, while migrants remain at risk of abuse, detention and even death. Failure to act will also constitute a breach of the commitments made under the Global Compact, the UNTOC and the Sustainable Development Goals, especially Target 10.7 dealing with the facilitation of safe and regular migration.

If these reforms occur, states will be better positioned to dismantle smuggling networks, address irregular migration and protect migrants, especially those most at risk.

The next 12–18 months will be important decision points in:

- the legislative windows for ratification and alignment of the smuggling protocol;
- regional migration summits and technical dialogues;
- donors' roundtables for financing smart border and protection systems; and
- GFMD meetings for launching pilot projects.

Recommendations

Ratify and operationalize the UN Smuggling Protocol. Conduct legal gap analyses and inclusive legislative reforms in collaboration with civil society and migrant-led groups (UNODC 2020).

Enable multilingual AI detection for digital recruitment scams. Deploy AI web crawlers to detect fraudulent job ads, phishing and deep fake recruiters — especially in rural, under-connected areas (ibid.). Integrate automated takedowns, real-time alerts and partnerships with tech platforms (ibid.).

Create a diplomatic "trafficking-free" passport certification program. Certify embassies and consulates to: screen employers/recruiters; provide rights-based pre-departure documentation; and ensure migrant access to emergency consular aid (ibid.).

Lead anti-trafficking campaigns through esports and gaming: Partner with gaming platforms to embed survivor-led prevention content into games, missions and tournaments (ibid.). Reach youth — especially boys often missed by traditional awareness campaigns (ibid.).

Create predictive heat mapping of recruitment exploitation zones. Use mobile data, satellite imagery and local economic indicators to: identify high-risk recruitment zones; and trigger mobile education units and community alert systems (ibid.).

Survivor-led digital counter-narratives train survivors as digital advocates using platforms such as TikTok, Instagram and YouTube to: debunk trafficker lies; share lived experiences and safety tips (and build trust with at-risk audiences (ibid.).

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Artificial Intelligence Policy to Combat Human Trafficking

Jennifer S. Park-Burrows, Claudette Segura, Anna Viñals Musquera and Rodas Wodaj

Issue

This brief outlines four Artificial Intelligence (AI)-driven policy strategies to combat human trafficking, aligned with the UN Global Compact for Migration (GCM), particularly Objectives 10 and 23. It emphasizes the urgent need for ethical AI regulation, predictive analytics, risk mitigation frameworks, and expert-led training. With trafficking generating up to US$498 billion annually, coordinated, AI-enabled international action is essential to disrupt transnational criminal networks and protect vulnerable populations.

Background

Human trafficking remains a pervasive global crisis. The International Organization for Migration (IOM) defines it as the recruitment, transportation, transfer, harbouring or receipt of persons through threats, force, coercion, abduction, fraud or deception, for the purpose of exploitation. As of 2025, an estimated 50 million people are trapped in modern slavery — including forced labour, sexual exploitation, and other forms of coercion (World Economic Forum 2025). The illicit profits from forced labour alone are estimated at US$236 billion annually (ibid.), while the Global Coalition to Fight Financial Crime (GCFFC) places the total proceeds from human trafficking at up to US$498 billion (GCFFC 2024). Traffickers capitalize on economic hardship and instability, with data showing that a one percent rise in unemployment correlates with a 0.5 percent increase in trafficking cases (Our Rescue 2025). The digital era has further enabled these networks, with online recruitment now involved in roughly 25% of trafficking situations (ibid.).

Human trafficking is fundamentally a transnational crime, orchestrated by organized criminal groups that exploit vulnerable populations for profit. Operating across well-established global routes, these networks subject individuals to extreme harm, destabilize regions, fuel illicit economies, and erode governance structures. As trafficking networks grow more sophisticated, their increasing use of encrypted communications, digital payment systems, social media, and online recruitment platforms makes detection and disruption more difficult. Meanwhile, traditional enforcement responses struggle to keep pace, hampered by fragmented data-sharing systems, jurisdictional boundaries, incompatible data systems, and inconsistent legal frameworks. Addressing this evolving threat requires proactive, innovative, and coordinated strategies that strengthen cross-border cooperation and global governance.

To combat these evolving threats effectively, governments and international actors must adopt proactive, coordinated, and technologically informed strategies. This policy brief explores how emerging technologies — particularly AI — can disrupt trafficking networks and strengthen migration governance. It calls for the development of a collaborative, rights-based global framework to guide the ethical deployment of AI tools, in alignment with international standards and the objectives of the UN GCM:

- **Objective 10:** Prevent, combat and eradicate trafficking in persons in the context of international migration.
- **Objective 23:** Strengthen international cooperation and global partnerships for safe, orderly and regular migration.

Recommendations

Establish independent AI oversight boards that include international actors (for example, the UN Educational, Scientific and Cultural Organization (UNESCO), the IOM, national regulators), mandate public reporting on migration-related AI deployments and ensure legal mechanisms to challenge harmful AI decisions. Given the rapid evolution and associated risks of AI, especially in high-stakes domains such as border control and surveillance, it is imperative to establish regulatory frameworks that set clear, enforceable standards for ethical AI use. These frameworks should align with internationally recognized AI governance standards, such as:

- *The Organisation for Economic Co-operation and Development (OECD) AI Principles:* promoting AI that is innovative and trustworthy and that respects human rights and democratic values;
- *UNESCO's Recommendation on the Ethics of AI:* providing a global normative framework for the ethical use of AI; and
- *EU AI Act:* establishing a legal framework for AI that ensures safety and fundamental rights protection.

Each of these frameworks reflects values endorsed by US policy under the Biden administration — particularly an emphasis on ethical, human-centric AI governance. Until recently, the United States actively supported the OECD approach, which prioritizes transparency, fairness, privacy protection, and bias reduction. These principles are essential for protecting vulnerable populations, including migrants.

Since 2022, US AI policy has advanced these values through initiatives such as the Blueprint for an AI Bill of Rights and by supporting multilateral standards focused on algorithmic accountability and public trust. However, recent shifts under the new administration signal a move toward prioritizing "high-impact" AI applications and economic competitiveness. This change raises concerns that ethical safeguards could be weakened in favour of rapid deployment.

This is a pivotal moment for national and international actors to reaffirm their commitment to human rights-based AI governance. AI systems deployed in migration and security contexts should be subject to independent oversight, comprehensive data protection standards, and rigorous ethical review. Regulatory frameworks must also consider AI's impact on both human and non-human populations, ensuring strong protections against misuse and discriminatory practices. Governments now have a critical opportunity to lead by shaping global standards that restore public trust and embed ethical AI use at the core of migration governance.

Enhance AI-enabled risk assessment tools. Governments should strengthen AI-powered intelligence and surveillance tools for early detection of human trafficking. This involves addressing system vulnerabilities, adding robust mitigation protocols, and conducting regular audits to mitigate bias and ensure accountability.

Utilizing UNESCO's Readiness Assessment Methodology (RAM) and Ethical Impact Assessment (EIA) can guide ethical AI development and deployment. RAM helps identify and resolve gaps in AI governance, while the EIA complements RAM by examining the entire lifecycle of AI systems — design, development, and deployment. It enables a thorough risk assessment before and after an AI tool is released, ensuring that each system aligns with UNESCO's ethical AI principles. By integrating the EIA, governments can detect potential ethical issues, such as bias or misuse, early and make necessary adjustments, strengthening accountability in AI-driven surveillance and risk detection.

Specific actions include conducting a comprehensive EIA by performing detailed technical evaluations approved in an international partnership. This includes joint security testing and assessments of industry AI tools. Leveraging the EIA, tailored to prevent and mitigate vulnerabilities, ensures that proper deployment and regulation are upheld.

Short term: Establish an EIA oversight team with technical experts to plan and initiate ethical impact assessments for new AI tools, using the RAM framework as a guiding baseline.

Medium term: Conduct comprehensive external reviews of AI systems (for example, joint security testing of industry AI tools through international partnerships). Ensure algorithmic transparency and involve government authorities in monitoring AI deployments. These assessments will identify potential ethical impacts, address human trafficking risks, ensure responsible use of AI, and mitigate biases in algorithms.

Long term: Implement continuous monitoring and regular security enhancements for AI tools. Governments should partner with international organizations and the private sector to ensure that AI-driven surveillance systems comply with international ethical standards (including UNESCO's AI ethics frameworks), reinforcing accountability and effective risk management. Implement predictive analytics in migration and border management. AI-driven predictive analytics can significantly improve

the ability of authorities to address migration and border management challenges — if deployed with caution and under ethical safeguards. This policy supports the use of data-driven models to proactively identify patterns of irregular migration and potential trafficking hotspots, enabling earlier and more informed interventions.

To be effective and context-aware, predictive models should draw on a wide range of indicators:

- *Direct:* Previous trafficking incidents, visa anomalies, suspicious financial spikes, and sudden shifts in irregular travel routes.
- *Indirect:* Conflict in regions of origin that increase vulnerability to trafficking, high unemployment, and broader economic instability.

Combining diverse data points improves predictive modeling and can more effectively and accurately detect emerging risks while ensuring contextual awareness, maintaining fairness, and precision. However, predictive analytics must be deployed with strong institutional, technical, and ethical safeguards. Following UNESCO's RAM, authorities must first confirm they have the capacity to manage these systems responsibly. This includes:

- conducting ethical impact assessments to evaluate risks and ensure systems align with human rights principles;
- Applying robust privacy protections and securing sensitive data;
- integrating bias mitigation protocols, such as regular algorithm audits;
- establishing transparency mechanisms to explain how systems function and impact decisions; and
- ensuring human oversight at every stage of development, deployment, and use.

To build public trust and ensure accountability, predictive models must be explainable, transparent, and open to independent review. Agencies should clearly disclose how these systems are used and invite expert evaluation to detect potential misuse or unintended harm. This approach is consistent with global standards such as the OECD AI Principles, UNESCO's AI Ethics Guidelines, and the EU AI Act, which designate migration-related AI as high risk and subject to rigorous oversight. When implemented responsibly, predictive analytics can play a critical role in enhancing migration governance — identifying vulnerabilities early, preventing exploitation, and doing so without compromising the rights and dignity of those on the move.

Mandate training for AI use in anti-trafficking surveillance. Training is critical to ethical deployment. Comprehensive training in ethical AI use, AI capabilities, human trafficking indicators, and human rights protections must be mandated for all law enforcement agencies and partner organizations deploying AI in trafficking detection or surveillance. Training should be delivered through partnerships among AI ethics experts, anti-trafficking organizations, and accredited law enforcement academies. Organizations such as DeliverFund or Polaris, which combine expertise in trafficking detection and survivor-centred practices with robust AI knowledge, can serve as potential trainers.

This training lays the groundwork for formal certification programs led by anti-trafficking experts, especially those developing or supplying AI tools to law enforcement. Embedding rights-based oversight in these certifications will standardize ethical AI practices and ensure that deployments uphold privacy and due process. Establishing this system creates safeguards against unethical or unskilled use of AI in high-risk law enforcement scenarios, marking a step toward greater accountability and transparency.

Implementation:

- Partner with organizations such as Polaris or DeliverFund for curriculum development.
- Establish certification programs for all AI vendors and operators in law enforcement.
- Incorporate simulation-based learning, case studies, and survivor-informed perspectives.

Evaluating training outcomes should be integral to ensure real-world effectiveness and adherence to standards.

Acknowledging the Risks

AI misuse can result in surveillance overreach, profiling, or violations of due process — especially in migration contexts. Without strong ethical guardrails, these technologies risk reinforcing systemic injustices. This brief's recommendations aim to prevent such outcomes through rigorous governance, transparency, and oversight.

Conclusion

The integration of AI into anti-trafficking efforts presents a powerful opportunity to disrupt criminal networks and protect vulnerable populations. Yet to be effective and just, these technologies must be deployed within ethical frameworks, subject to strong and comprehensive governance, and grounded in international human rights law. The policy measures outlined in this brief — ranging from regulatory oversight and predictive tools to ethical risk assessments and specialized training — offer a concrete

path forward. When implemented collaboratively, they can enhance victim identification, prevent exploitation, and support cross-border investigations.

In doing so, they not only fulfill Objective 10 of the GCM but also advance Objective 23 by fostering international cooperation and partnership. Governments, international organizations, and private actors must act now to embed ethical AI into migration governance — and ensure that innovation serves justice, accountability, and human dignity. With the right investments and political will, governments and multilateral institutions can lead a global transformation in ethical AI deployment — saving lives and setting a new standard for human-centred migration governance.

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BridgeYou

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Issue

Refugees worldwide face considerable hurdles in recognizing their professional and academic qualifications, which hinders their integration into the labour market and economic participation.

Background

According to the United Nations High Commissioner for Refugees (UNHCR), more people have had to leave their countries of origin than ever before. According to the United Nations, as of 2024, the number of international migrants was 304 million (UNHCR, n.d.a). At the end of June 2023, around 122.6 million people were forced to flee their homes, including around 43.4 million refugees globally (UNHCR 2023). The increasing number of migrants and refugees is mainly due to ongoing wars, violence, economic inequality, political instability, climate change and the exacerbation of these factors. Once they arrive in the host country, refugees find themselves facing what the UNHCR calls "Protracted Refugee Situation," referring to the long-lasting, unmanageable state of limbo from which they cannot escape due to the ongoing persecution and armed conflicts back home (UNHCR 2023). Given this, the most realistic and humane approach that host countries can take to the refugee situation is to make substantial efforts to incorporate them and make them active participants in the economy, the labour market and their society.

When leaving their home countries, migrants bring with them clothes, documents and any other essentials, but most refugees cannot do so. What refugees do bring with them are their competencies and skills that they've worked for and acquired through studies and hard work in their countries of origin. Amid conflicts and their hurry to flee, they reach their host countries without official documents proving their professional or academic qualifications (UNHCR n.d.b.). This problem relates to the assessment of skills and recognition of qualifications applicable to both refugees and migrants, although refugees are confronted with even more obstacles. Likewise, host countries face considerable challenges in the evaluation and recognition process. As a result, the skills of refugees and migrants often remain unused. Many refugees end up unemployed or working in low-skilled, informal, temporary and badly paid positions (ibid.). This is a loss not only for those persons affected, but also for the host societies and their economies (ibid.). Furthermore, existing systems for recognizing foreign qualifications are often fragmented and slowed by their bureaucratic nature.

BridgeYou aims to tackle Objective 18 of the Global Compact for Safe, Orderly and Regular Migration: "Invest in skills development and facilitate mutual recognition of skills, qualifications and Competences." This objective calls for innovative solutions and investment in skills development and the mutual recognition of qualifications of migrants and refugees in their host countries (International Organization for Migration [IOM] n.d.). To this end, standards for the recognition of qualifications as well as digital assessment methods need to be created, and cooperation between stakeholders must be promoted (ibid.).

Existing Systems for Recognizing Foreign Qualifications

New technologies such as artificial intelligence, digital platforms and blockchain are opening up new opportunities. The use of these technologies in migration management is growing rapidly, driven by efficiency, security and data-driven decision making (European Commission 2022). These technologies can help identify skills, define individual educational pathways and enable fast and secure recognition, even in cases where original documents are missing.

Some technologies are already being used in several initiatives that make the recognition of qualifications more efficient, accessible and secure. Some of the most important programs and initiatives are listed below:

- Lisbon Recognition Convention provides a flexible approach to the recognition of qualifications held by refugees (European Network of Information Centres and National Academic Recognition Information Centres [ENIC-NARIC] n.d.a). It sets common standards for the assessment of qualifications and promotes cooperation between recognition bodies (ibid.).
- The European Qualifications Passport for Refugees offers refugees an opportunity to have their qualifications assessed by conducting structured interviews and analyzing their educational and professional experiences (Council of Europe 2024).
- UN Educational, Scientific and Cultural Organization's (UNESCO's) Digital Credentialing Initiative develops solutions for storing and verifying educational qualifications to make them easier to recognize globally (UNESCO n.d.).
- The World Education Services (WES) Gateway program helps refugees from certain countries to have their educational qualifications recognized for the Canadian labour market or universities (based on existing documents) (WES 2025).
- The ENIC-NARIC networks support the recognition of foreign qualifications in Europe through national information centers based on common standards (ENIC-NARIC n.d.b).

Although some initiatives that recognize foreign qualifications exist, they often remain fragmented. There is an over-dependence on official documentation, which, for migrants and refugees, is highly unlikely that they have in their possession. They tend to focus solely on the recognition of qualifications without taking into account skill gaps. There is a lack of alignment with the local labour markets, creating further dissonance. In addition, most of them still require existing documentation instead of using alternative assessments such as AI-supported skills analysis or digital tests. Therefore, the proposal is a coordinated digital platform that recognizes qualifications, provides targeted training and creates a direct link to the labour market.

Recommendations

With a view to the International Migration Forum 2026, there is a concrete political window of opportunity to anchor technological reforms internationally. The proposal can be implemented as a pilot initiative by the UNHCR, educational institutions and selected states (for example, Germany, Canada) and expanded through bilateral and multilateral agreements.

BridgeYou is an online, user-friendly and inclusive platform that aims to contribute to the development of skills and facilitate the mutual recognition of skills, credentials, qualifications and competencies for refugees so they can work and live fulfilling lives in their host country.

The platform is envisioned as a non-profit platform, mission-driven, tech-enabled and financially sustained through multilateral partnerships with governments, UN agencies and private sector actors. BridgeYou is to be developed in collaboration with the UNHCR, the UN Institute for Training and Research, and the private sector, as it makes use of the power of technology and digitalization. With this platform, both credentials and skills will be addressed. On the platform, refugees can upload important documentation, if available, about professional and academic experiences (for example, certifications, diplomas) so they can ultimately work in their field of expertise in the host country. In addition, the platform identifies the gap between the skills that the refugee has and the ones they are missing to be able to work in the host country. This is one of the innovative aspects of the platform, as it allows the differentiation of degree levels and preparation that refugees might have, since working in specialized fields such as law, medicine or other technical professions might have different requirements in different countries or regions.

The idea is that the platform possesses relevant and extensive information on what educational preparation a person has gone through in their home country and what requirements, skills or certifications might be missing to perform a specific job somewhere else. Finally, the platform seeks to effectively bridge that gap in skills through short online courses, making it possible for refugees to be

incorporated into the labour force promptly. Aiming for inclusivity, BridgeYou will also include modules on basic language training and cultural adaptation. The platform will not replace past or existing efforts but instead build from them to provide a future-oriented option. Even though it has the option to upload documentation, it is not solely dependent on it, and with AI tools it would recognize and assess skills and qualifications. Furthermore, BridgeYou, in cooperation with non-governmental organizations (NGOs) and universities, provides opportunities for upgrading skills to fill in the gap between job requirements in host countries and skills or qualifications earned in a home country.

Key Players and Partnerships

- UNHCR: The UNHCR's experience with refugees, its trajectory and technical know-how will boost the efficiency of the project. Leveraging the UNHCR's relationship with governments will increase the recognition and subsequent adoption of the platform at an international level, encouraging its integration into host countries' legislations and policies.
- Cooperation with universities: Given the difficulties in assessing a person's skills and difference in qualifications to practice a profession from country to country, universities are key allies to BridgeYou, by feeding the system with necessary information, training (formal and informal) and skills that an individual seeking refugee status in another country has already acquired.
- Vocational training institutions: These play a central role in the recognition and supplementation of professional qualifications, since practical training courses can help refugees to better adapt their existing skills to the requirements of the labour market in the host country.
- Private technology providers and platform companies: These can contribute their expertise in the development of user-friendly, data-secure infrastructure in a way that the platform is more attractive for governments and the private sector to invest in and lobby for its incorporation.
- Civil society: NGOs and civil organizations can provide refugees with support by offering advice, promoting social acceptance and contributing to or lobbying for the political implementation of this initiative.

Key Components of BridgeYou

Creation of a digital platform for skills qualification recognition:
BridgeYou would provide a centralized, multilingual and digital (web and mobile) platform that allows refugees to upload and store documentation related to their education, training and professional experience (even if incomplete). The system would integrate AI-supported skills assessments (for example, digital exams, interviews, competency tests) that evaluate both formally and informally acquired skills.

BridgeYou aims to stand out from existing platforms by reducing the fragmentation among them. It does so by forming strategic partnerships across sectors to validate the prior learning and competencies of refugees, even when official documentation is missing. Through AI-supported assessments and targeted courses, BridgeYou helps users bridge gaps in their qualifications and meet host country requirements. The platform connects users with relevant networks such as government services, training and educational institutions. By offering personalized, country-specific career pathways, BridgeYou fosters professional recognition and supports meaningful integration into the labour market. Finally, this initiative would promote harmonization of qualification standards across regions by incorporating compatible national qualifications frameworks.

Identifying and bridging skill gaps through targeted upskilling:
BridgeYou outlines and identifies the specific gaps between a refugee's existing qualifications and the host country's requirements (for example, to work as a doctor, nurse or technician). The platform also offers flexible training modules in collaboration with universities and other education entities in the host country, including online courses, language training, and cultural adaptation to bridge these gaps in an efficient way.

University and educational institution partnerships:
Partnerships with universities are a key component of the platform to verify credentials and provide guidance on equivalency (for example, through the Andrés Bello Agreement in Latin America or similar regional mechanisms) . This also encourages joint degree/ certificate recognition programs and facilitates knowledge exchange between academic institutions in countries of origin and destination.

Private sector and government engagement:
BridgeYou involves private companies and industry associations to ensure the training is demand-driven and aligns with real labour market need. It also creates incentives for employers to hire from the platform pool (for example, tax credits, diversity promotion, recognition schemes. Fiacts as a tool for governments to meet labour shortages while promoting safe and orderly migration.

Ethical Considerations

The integration of advanced technologies in migration processes introduces significant ethical challenges. These tools often handle highly sensitive personal data, which, without safeguards, can be misused and lead to discriminatory outcomes. Ensuring the protection of refugee data is critical; without clear, enforceable standards for data collection, storage, sharing and deletion, the risk of abuse remains high. While these technologies offer benefits — improved security, faster service delivery and efficient integration — they must be deployed in a way that upholds human dignity and autonomy. To mitigate these risks, the implementation of clear ethical and legal frameworks is essential. This includes strict compliance with international human rights and data protection standards, the establishment of transparent data governance policies and the creation of independent oversight mechanisms to ensure accountability and quality control. Only with these safeguards can emerging technologies be harnessed in a way that benefits refugees while minimizing harm.

BridgeYou will partner with private technology institutions, such as cybersecurity firms, cloud service providers and AI developers. They will be contractually obligated to adhere to strict international data protection standards, including the General Data Protection Regulation and UN Principles on Personal Data Protection and Privacy. These actors may also be involved in long-term platform maintenance, but only under transparent governance frameworks with clear oversight mechanisms. The platform will also integrate user-controlled consent mechanisms, allowing individuals to decide what data to share/upload, revoke access at any time, delete uploaded documents and delete their profile and data permanently. This ensures that refugees retain full ownership over their digital identity.

Technological Impact Assessment

Positive effects include:

- Faster integration of migrants into the labour market. The platform would ultimately allow for the migrants' skills, qualifications and degrees to be recognized in a manner that would enable them to start working in the host country.
- Greater economic participation and benefits. As migrants become part of the labour force and human capital, this would also provide an economic benefit to the host country as the economy circulates.
- Better use of resources:
  - Some societal groups and economic sectors might view refugees as costly for the state, which can disincentivize funding and lead to discrimination and xenophobia. The policy proposes to change this view, ensuring enterprises see refugees as an asset and this project as an investment, as migrants become part of the economy and community quickly and according to their abilities.
  - As the world becomes more globalized, every country's need for workers with certain skills and/or qualifications increases with it, for which a platform that aims to ascertain these skills would allow host countries to find the correct allocation of migrants into the economy and workforce.
- The option of different languages for better adaptation. One of the benefits of technology is its universality. The platform provides different languages, which leads to a more inclusive platform for migrants of different backgrounds/cultures/regions/languages.

Negative effects include the use of sensitive personal data, especially under biometric or AI-driven systems, raises concerns about privacy, cybersecurity and potential misuse, particularly in contexts with weak governance. There is also the risk of exclusion or discrimination if technology is not designed with ethical safeguards. Preventing misuse requires strong data protection policies and careful oversight to ensure that technology empowers rather than harms.

Use of AI

The use of AI raises concerns regarding bias and overreliance on this tool, but AI adds unique value and follows the "you deserve your skills to be recognized wherever you go" approach. Traditional platforms stop at the "upload your diploma" step, but BridgeYou, powered by AI, assesses real skills through smart, dynamic testing, digital interviews, pattern recognition and language processing tools. This is relevant in the case of refugees when formal proof is often unavailable. Without AI, the platform would exclude those who can't provide documents, which is the core challenge being addressed. Additionally, AI will allow BridgeYou to grant access to personalized upskilling plans and job matching based on background, host country and target profession that would take a case manager hours per user; AI can do this in seconds, and continuously improves and learns with more data.

Conclusion

The recognition of skills and academic qualifications of refugees is not just a matter of fairness, it is a state's strategic investment in human potential. BridgeYou offers

a modern solution that leverages technology to promote inclusion, dignity and economic participation for refugees. By aligning refugee competencies with labour market needs, the platform benefits both displaced individuals and host societies. In a global context marked by increasing displacement, tools like BridgeYou are key to building resilient and inclusive communities.

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Stablecoin: Promoting Faster, Safer and Cheaper Transfer of Remittances and Foster Financial Inclusion of Migrants

Tyquaisha Dickerson and Frank Spathanas

Issue

The following five-point policy framework is in support of the United Nations Global Compact on Orderly Migration, which aims to improve international cooperation on migration; specifically Objective 20, which reads, "promote faster, safer, and cheaper transfer of remittances and foster financial inclusion of migrants."

Background

Remittances have a transformative impact on the well-being of migrant workers and their families (Monterroso and Vilan 2025). However, under the current environment, remittances are prohibitively expensive and slow. In addition, the negative effects are often felt by women more than their male counterparts (UN Women 2020). Lastly, safety and transparency concerns abound (Financial Action Task Force 2021). The following policy framework will enable competition, regulation and innovation among remittance providers as well as bring down the cost and time to complete a transfer while leveraging emerging technologies to do so in ethical ways.

Policy Framework

This framework leverages existing technologies in novel ways to support the objective of facilitating international remittance transactions. It is meant to be a pilot program that is scalable and produces revenue to fund operations. The example of this framework, if successful, can serve as a model for policymakers and private-sector individuals in high-volume remittance corridors. The framework consists of the following five points:

- **Stablecoin:** A stablecoin is a digital currency whose value is pegged to another asset to avoid wild fluctuations in price. It is an accounting tool that provides a transparent and immutable record of transactions.
- **Smartphone application:** Smartphones are ubiquitous, even among migrants. A smartphone application will be the primary user interface for interacting with the system, something that almost everyone is already well-acquainted with. Typical identity verification and know-your-customer procedures are easily employed.
- **Customer service:** Large language models are capable of providing accurate and personalized customer service guidance to migrants at all hours, in any language and for a minimal cost to operate.
- **Point of exchange (PoE) terminals:** A key aspect of the remittance transfer network is availability. Exchanges of currency will take place at locations where migrants and their families already do business, such as supermarkets, convenience stores and banks. Software will record the transaction and deposit digital currency into migrants' accounts or direct the sale operator regarding how much local currency to dispense.
- **Marketing and outreach:** To increase awareness and usage, it is imperative that the system be intuitive and frictionless. Additionally, it must be accompanied by a campaign to inform potential users of the services provided. High volume will help keep transaction costs minimal.

Example

A Honduran migrant living in the United States goes to the grocery store to buy groceries. At the register, he decides to send his family in Honduras US$100 from his last paycheque. The grocer will process the transaction, accept the cash and the PoE software will automatically distribute the appropriate transaction fees to both the retail exchange outlet and the platform provider (in this case, US$1 each). Periodically, the retail outlet and the platform provider will utilize traditional channels to transmit fiat currency between them.

In Honduras, the migrant's wife is notified of the deposit (approximately 2,557 lempira, equivalent to about US$98 after transaction costs). The next time she goes shopping at a partner retailer, she can have some or all of the cost deducted from her account balance and, if she chooses, receive the rest in cash.

Considerations

While there are associated start-up costs, the program is intended to be funded via transaction fees. The structure incentivizes competition from partner retailers and the IOM can keep fees as low as is necessary to cover costs. The framework is a blueprint for an international financial services company. While it does require relationships with banks and retail outlets, it does not intend to be an insured store of value or provide a rate of return.

There may also be concerns about money laundering or other illegal activities. This is a new space where additional regulation is necessary. By providing this service, the provider will be at the centre of crafting that regulation for the future. The data generated will be vital to that process. The stable coin is less of a currency and more of an accounting tool. The objective is to be insulated from wild fluctuations in value to discourage hoarding or speculation. Wallets will not be used as a savings account, but more like a joint chequing account. The end-user never knows they are using a cryptocurrency. It is simply a way to transfer value that is quick, reliable and cheap.

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Leveraging Emerging Technologies to Enhance Remittance Transfers to Zimbabwe

Oluwaseyi Agboola, Bruk Asmellash, Joseph Kanyayi and Perfect Mazani

Issue

Remittances are a significant source of economic support to migrant households and the national economic growth of migrants' countries of origin globally (Adeseye, 2021). The beneficial impact of remittances cannot be ignored in the modern world, they are one of the primary sources of international financial resources and a powerful tool for poverty reduction, occasionally surpassing flows of foreign direct investment (FDI). . However, the traditional remittance channels are expensive, time-consuming and inaccessible to unbanked people, evident in low-income countries, particularly among low- and middle-income earners. This pushes individuals to informal and unregulated channels that are not officially captured in government statistics and are risk prone (Adams and Page 2005). This policy brief considers the possibility of new technologies such as blockchain, mobile banking and artificial intelligence to help ensure remittances are efficient, secure and affordable, and provide financial inclusion for all migrants.

Background

The 2019 UN Global Compact for Safe, Orderly and Regular Migration specifies Goal 20, wherein it requires remittance transfers to be more affordable, more secure and quicker in the hope of raising the economic wealth of migrants and promoting economic development. Globally, there has been an overall increase in remittances in recent decades, from US$128 billion in 2000 to US$831 billion in 2022, with low- and middle-income countries receiving a larger share of remittances, about US$647 billion (International Organization for Migration [IOM] 2024; Nucita 2024). These figures exclude unrecorded money transfers made through informal channels to avert the high costs of remittance transfers, but these transfers are mostly slow and risky. . Transfers to Sub-Sahara Africa were US$54 billion in 2023, which aided the current accounts of numerous African nations coping with food hunger, drought, supply chain disruptions, floods and debt servicing issues (Ratha et al. 2024). However, remittances continue to be plagued by extremely high transfer charges (6.3 percent is the average worldwide), lengthy processing times and limited access to banks for migrants to be able to get maximum value from their remittances. The World Bank (2023 estimates that reducing remittance fees to three percent from 6.3 percent could save migrants over US$20 billion annually. Therefore, reducing the cost of sending remittances and bringing informal transfers to a formal channel using technology are essential to promote sustained remittance flow and support socio-economic development.

In particular, remittances from South Africa to Zimbabwe face challenges, including high transaction costs, reliance on informal channels and the need for a more developed regional remittance market to facilitate secure and efficient transfers. Moreover, while digital remittance services are rising, the vast majority of remittances are still received in cash. This is partly due to a lack of digital ecosystems that enable enough variety and choice in sending digital value instead of cash. Consumer trust in digital services is also still nascent, with remitter groups tending to stick with trusted providers.

Key Findings

Informal Transfer

A significant number of remittances from South Africa are informal — up to 68 percent. This method is preferred because of its discretion and anonymity, freedom from formal institutions, availability of loans and trust in their connections, primarily by undocumented and illiterate migrants. These remittances include cash and goods using informal money transfer operators, hand carriage or sending through visiting family, friends or bus drivers in hawala-like systems. While this method fulfills the recipients' needs, it raises significant concerns as it bypasses regulations, is prone to use for illicit activities and is difficult to track (Nzabamwita 2015). The government discourages the use of this means and, over the years, other transfer forms have been encouraged.

Mobile Technology

In Sub-Saharan Africa, smartphone penetration increased by 39 percent in 2018 and is projected to rise to 66 percent in 2025. This growth in mobile technology has led to the widespread adoption of digital money transfer services designed to cater to unbanked populations, making remittances cheaper and more accessible (World Bank 2023). Similarly, technological advancements in South Africa have significantly facilitated international remittance transfers, helping to address high transaction costs, increase transfer speed and enhance security, ultimately benefiting senders in the region. However, barriers to such high data costs, limited internet access and financial illiteracy persist. This raises concerns about the true accessibility of mobile-based remittance solutions.

Recommendations

Based on the research findings, the following recommendations are offered. The expected impacts will be: low fees on remittances, more money in the hands of migrant families; rapid remittances with enhanced financial security for recipients; broader financial inclusion, particularly for unbanked migrant communities; and reduced fraud and illegal flows based on the application of artificial intelligence and blockchain security systems.

Fintech companies and banks should adopt blockchain-based remittance systems to enable low-cost transactions. Blockchain technology is an advanced database mechanism that allows for transparent and secure transactions without a third party, reducing costs while ensuring safe transactions. The government and the financial sector can collaborate on blockchain-based remittance platforms to establish low-cost, real-time payment systems. This type of transaction benefits the government by tracking the number of remittances and aiding economic planning. It also benefits the senders by protecting their identities.

The World Food Programme has successfully tested a method for humanitarian aid for refugees called Building Blocks. This method provides refugees with anonymous biometric identifications (IDs) used to purchase goods or share with family members. The method allows organizations to make up-to-date efforts to avoid duplicating efforts. It is designed for basic smartphones, increasing accessibility for more migrants (World Food Programme 2018). The model could easily be adapted for migrants who wish to send money across borders while protecting their identity.

For example, cross-border remittances have been transferred over the Stellar blockchain network at 0.1 percent per transaction (Skauradssun 2023). Similarly, Project Khokha at the South African Reserve Bank has explored the use of blockchain technology for interbank settlement using a tokenized South African rand. Finally, BitPesa (now AZA Group), which was funded by the Development Bank of Southern Africa, aims to decrease the cost and increase the speed of payments in frontier markets for both individuals and businesses, including international remittance transactions through cryptocurrency, mobile money and digital channels.

To mitigate the risks of blockchain, states should: advocate for permissioned, fintech-approved or central bank-approved blockchains; ensure features such as error correction, data privacy and dispute resolution; support offline technologies (USSD [Unstructured Supplementary Service Data], SMS [short message service]) to include everyone; propose a phased rollout starting with Johannesburg–Harare to manage costs; and seek financing from the World Bank or African Union fintech programs.

Governments should invest in digital identity programs to ensure that migrants are able to access financial products. Migrants are being locked out of financial services because they do not have legal identity documents. Governments and multilateral institutions must adopt digital identity platforms (for example, blockchain-based ID, biometric authentication) to allow migrants to access bank accounts and formal financial services. For example, digital identity systems for the World Bank's ID4D (Identification for Development) initiative can improve migrants' access to finance.

Telecom operators should push mobile money services to enable financial inclusion. Migrants without bank accounts can use digital wallets to send money globally. Families and migrants lack formal banks, but both possess phones. Mobile wallet payment (for example, Send imali, Ewallet, M-Pesa, Ecocash) promotes discouragement of cash payment. For example, remittance in Kenya's M-Pesa enables migrant workers to remit directly into payees' mobile wallet, which is readily accessible (Mutero 2020).

International organizations (for example, the IOM, World Bank) should exert pressure to adopt policies reducing the cost of remittance and enabling transactions. High costs of remittance are a discouragement, particularly for poor migrants. Governments in Southern Africa should partner with fintech providers, banks and telecom companies in order to drive low-cost corridors of remittances and dispense with remittance fees lurking within the system. For example, the EU-African Union Remittance Partnership has been making migrant corridor transaction costs decrease.

States and the private sector should work together to lower costs. People have built trust over years with bus drivers and agents who assist them with their remittance needs. Additionally, some individuals would much prefer physical interactions and may require assistance due to illiteracy. The government can work with them rather than attempting to replace those structures. This will work through a "community agent model," where trusted informal actors (bus drivers, cross-border traders, spaza or tuck-shop [informal, micro-convenience shop] owners) are trained, licensed and integrated into a digital remittance ecosystem".

Conclusion

Remittances play an important role in supporting livelihoods and national economies in low- and middle-income countries where they sometimes surpass FDI. However, despite their significance, the remittance landscape is marred with high transaction costs, limited access to formal financial services and reliance on informal transfer channels. These challenges are more pronounced in remittance corridors such as South Africa to Zimbabwe and are exacerbated by lack of documentation of migrants and poor infrastructure to enhance formal transactions.

Emerging technologies such as blockchain, mobile money and digital ID systems have the potential to revolutionize remittance systems through enhancing affordability, cost-effectiveness, increased speed and security of transfers. There is need for public-private partnerships to facilitate and foster financial inclusion and eliminate structural barriers in order to unlock the full developmental efforts of remittances.

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