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Addressing root causes and drivers of irregular migration
An evidence gap map

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Social Protection

International Initiative for Impact Evaluation

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About this evidence gap map

This report presents the findings for a systematic search to identify and map the evidence base of impact evaluations and systematic reviews of interventions that aim to address the root causes of irregular migration in low- and middle-income countries. The EGM was developed by 3ie with funding from the International Organization for Migration (IOM) - Guatemala through the United States Agency for International Development (USAID) funded project, *Addressing the Root Causes of Irregular Migration in Guatemala*. The content of this report is the sole responsibility of the authors and does not represent the opinions of IOM, USAID, the U.S. government, 3ie, its donors or its Board of Commissioners. Any errors or omissions are also the sole responsibility of the authors. Please direct any comments or queries to the corresponding author, María Daniela Anda León, at danda@3ieimpact.org.

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Evidence Gap Map Report 30

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Executive summary

The purpose of this evidence gap map is to enhance access to knowledge regarding the effects of "root cause" programming on addressing irregular migration. We have focused on three root causes of irregular migration, which were prioritized based on policy salience and proximity in the causal path between the intervention and the decision to migrate. These include: (a) limited economic opportunities; (b) diminished resilience to shocks and stressors; and (c) violence and lack of safety within communities. We also examined: (d) drivers that contribute to unsafe migration, such as lack of or limited regular migration channels and knowledge about irregular migration risks.

Our inclusion criteria considered impact evaluations and systematic reviews of impact evaluations implemented in low- and middle-income countries for studies evaluating interventions in domains a, b, and c. For interventions pertaining to domain d, we also included high-income countries. We did not restrict studies based on publication status or language, though studies had to be publicly available from 1990 onwards to be included.

Of the 82,125 records retrieved from our searches of academic databases, registers, gray literature, citation tracking and an open call for papers, we identified 89 impact evaluations and 7 systematic reviews. We mapped these studies across 24 intervention categories within the intervention domains addressing the four root causes and drivers. We found that most studies evaluated human capital-strengthening interventions such as cash transfers (n = 41), active labor market policies (n = 16), and information campaigns about the risks of migrating irregularly (n = 21). However, the evidence was limited for other intervention categories.

We also mapped the included studies against five outcome groups: three of these considered final migration outcomes, including: (a) any migration and/or forced displacement; (b) international migration flow; and (c) international migration stock. Two groups on intermediate migration outcomes included: (d) intention to migrate; and (e) knowledge, perceptions, attitudes, and expectations. We did not restrict the inclusion of studies to outcomes specifically measuring irregular migration, whether as a frequency, proportion, or independent event.

We found that only eight studies reported the effects on irregular migration specifically and none reported on forced displacement. Most studies (n = 68) did not report whether migration (i.e., stocks, flows or rates) occurred through regular or irregular channels. We also found that a large proportion of studies examined interventions where migration was not the primary focus, and therefore not a primary outcome of the analysis (n = 65). The overall current state of knowledge highlights a need for more evidence generation on dimensions of migration—most importantly on irregular migration and forced displacement.

Policymakers can consult the EGM to determine whether there are extant impact evaluations available for their programs or policies of interest, consult the findings of relevant impact evaluations identified in this EGM, or commission impact evaluations for programs where there is no primary evidence. They can also commission systematic reviews where we have found clusters of evidence (human capital strengthening interventions, active labor market policies, information campaigns on irregular migration).

Researchers and funding agencies are able to use this EGM to identify priority primary research gaps, such as interventions that aim to reduce irregular migration by building safe societies and reducing violence, or by strengthening resilience against shocks and stressors. Further, in domains with clusters of evidence, but where interventions do not target migration directly, researchers and funding agencies should embed evaluative research within large investments.

We recommend that authors report more detailed measures of migration that clearly elucidate the type of migration to better understand how programs are affecting individual decision-making and capacity for achieving migration aspirations and reducing irregular migration risks. We further advocate for the use of mixed-methods research to elucidate the mechanisms through which interventions operate successfully or not, and to complement randomized controlled trials and valid statistical inferential methods such as instrumental variables, regression discontinuity designs, fixed effects, statistical matching, and synthetic control, in contexts where RCTs are not feasible.

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Acronyms

3ie   International Initiative for Impact Evaluation

EGM   Evidence gap map

IE   Impact evaluation

RCT   Randomized controlled trial

SR   Systematic review

1. Introduction

This evidence gap map (EGM) is focused on irregular migration and forced international displacement "root cause" programming effectiveness evidence. It identifies and characterizes the existing evidence base to facilitate its use to inform policy decisions.

EGMs are tools that support policymakers to make evidence-informed decisions by making evidence more accessible. The type of evidence mapped by this EGM includes completed or ongoing impact evaluations (IEs) and effectiveness systematic reviews (SRs). The results are presented on 3ie's online platform, which provides a graphical and interactive display of the evidence in a matrix framework. This visualization provides an easy and understandable overview of primary and synthesis research clusters and gaps. To identify specific studies of interest, the map includes filters, which users can apply to sort the evidence according to different parameters, such as study design, country, and population.

The specific objectives of this EGM are to:
- Identify IEs and SRs on the effects of interventions aimed at addressing the root causes and drivers of irregular migration, by looking at various outcomes of international or unspecified migration in low- and middle-income countries. Details on the domains covered in this map are presented in Section 3.
- Describe the characteristics of identified IEs and SRs.
- If available, summarize findings from included SRs assessed as medium or high confidence based on gold standard criteria for conducting systematic searches, reporting, and analysis in SR methodology.
- Identify primary evidence and synthesis gaps.

The next section provides background information on the prevalence of irregular migration. Section 3 then describes the scope of interventions addressing the root causes and drivers of irregular migration, and the outcomes we have researched. Section 4 details our literature search process and the criteria used to determine the inclusion of studies in this EGM. Section 5 presents our analysis of the characteristics of identified studies. Section 6 summarizes the results of a critical appraisal of included SRs. Section 7 provides a summary of the data on who has funded and implemented the IEs and SRs identified in the EGM. Finally, Section 8 contains our conclusions, and highlights key implications for policy and future research.

2. Background

In 2022, an estimated 281 million people (3.6% of the world's population), were international migrants or residing outside of their country of usual residence (IOM GMDAC, 2022). Migration serves important development purposes and is an internationally recognized human right (Global Compact for Migration 2018; UNSD 2022, 12; IOM 2022). When natural disasters, conflict, violence, persecution, state insecurity, or poverty destabilize countries, migration may be the only means of survival. With limited legal pathways for their migration journey, individuals are likely to transit outside of the laws and regulations of countries. The potential risks and costs arising from irregular migration and forced displacement increase vulnerability (Rose et al. 2021).

Due to the illicit nature of irregular migration, there is no single source of data on its prevalence. Therefore, there is limited reliable information on the scale of irregular migration and its potential effects on vulnerable populations. To our knowledge, Yayboke and García Gallego's (2019) estimate from 2018—that as many as 106.9 million people were in circumstances of irregularity, via transit or residence— is the only global estimate available.

Other numbers confirm that the scale of the issue is large and has far-reaching economic implications. It is estimated that smuggling revenues paid by migrants travelling from Latin America to the United States generates USD 7 billion annually (UNODC 2010). Regarding migration due to displacement, more recent estimates from 2021 find that globally, approximately 27.1 million people were involuntarily displaced from their country of origin (UNHCR 2021).

Migrating through irregular channels can put individuals at great risk of financial and labor exploitation, physical harm, violence, or death (Vutha, Pide, and Dalis 2011; Yayboke and Gallego 2019; UNODC 2021; ILO 2022). From 2014 to 2023, an estimated 58,830 people died or went missing while migrating internationally using irregular pathways (IOM 2023). When formal channels are limited, prospective migrants may enlist recruiters or smugglers to assist in irregular migration journeys. Soto and colleagues (2021) estimated that USD 2 billion is generated in smuggling revenues paid by travelers from El Salvador, Guatemala, and Honduras along their irregular journey. This number, according to authors, represents between 1–1.4% of these respective countries' 2020 GDPs.

While smuggling is a more nuanced phenomenon than often presented (Zhang, Sanchez, and Achilli 2018), research and data reveal that migrants experience dangers and harm during the migration journey. For example, Libyan migrants attempting to transit the Mediterranean reported being trapped in cycles of exploitation and abuse at the hands of traffickers. Their vulnerability was exacerbated due to physical isolation and inability to access state-conferred protections (Amnesty International 2020; Amenta, Di Betta, and Ferrara 2021).

Migrant women and girls are at high risk of gender-based violence and sex trafficking. An estimated 60–80% of female migrants smuggled through Mexico are victims of sexual violence (UNODC 2021). For women transiting through Mediterranean routes, estimates are as high as 90 percent (Ibid).

Migrants who successfully complete their journeys through irregular means have limited access to formal channels and services, and they may experience additional marginalization due to restrictions on movement after they arrive in destination countries. Lack of legal status limits access to formal and predictable livelihoods accessible thorough the protections under the law, basic services, and due process. This leaves irregular migrants in disadvantaged positions when bargaining with potential employers or recruiters (UN ESCAP 2020; Soto et al. 2021; ILO 2022; CREST n.d.)

Undocumented individuals may also experience psychological stress arising from their status and fears of deportation (Patler and Laster Pirtle 2018). Furthermore, the persistent threat of detention and deportation may deter migrants from returning home, which creates social burdens by keeping families separated.

In situations of forced international displacement, massive population outflows demand support from host countries, which are disproportionately represented by neighboring low-and middle-income countries (UNHCR n.d.). Without large-scale migration management and planning to handle refugee populations, host countries may experience environmental degradation and common-pool resource depletion, as well as burdens to public infrastructural support (Miller 2018)

Forced international displacement is ultimately most detrimental to migrant populations. An estimated 74 percent of all international refugees live in protracted situations in which displacement occurs for five or more years (UNHCR 2021). This disruption affects adults' ability to sustain regular livelihoods. Children are the largest demographic group affected by displacement, and can suffer adverse long-term psychological and nutritional impacts (Fazel and Stein 2002; Minoiu and Shemyakina 2014; Bjertrup et al. 2018). Interruptions of this kind in childhood and adolescence may also impact long-term livelihoods and economic productivity (UNHCR 2021). The scale and consequences of migration occurring out of necessity or inequality require greater international action.

3. Scope

The causes of migration are complex, multidimensional, and multilevel (de Haas 2021). Gent (2002) suggests that a confluence of factors simultaneously influence migration decisions. To establish an actionable scope, we use Carling's (2002) theory of migration aspirations and abilities—further adapted by Carling and Talleraas (2016) and Carling and Schewel (2018)—to identify the root causes of an individual's migration decision-making process. We also include global drivers that encompass being part of the so-called "migration infrastructure" that occur outside of origin countries.

This EGM identifies studies that quantitively estimate the effectiveness of interventions that address the root causes and other drivers of irregular migration. We used the following definitions for key conceptual boundaries:
- Carling and Talleraas (2016, 6) define root causes as: "the social and political conditions that induce departures—especially poverty, repression, and violent conflict." This may include the effects of shocks/stressors such as climate change or natural disasters.
  Drivers encompass all factors that influence irregular migration, which may include root causes and conditions occurring in origin countries, as well as phenomena that are not specific to a single geographical area but may influence migration flows (e.g., availability of information on regular channels). Therefore, all root causes are drivers, but not all drivers are root causes (e.g., lack of regular channels to migrate). This distinction aligns with policymaking definitions (IOM 2022).
- The International Organization for Migration (IOM 2019, 116) defines irregular migration as "movement… that takes place outside of the laws, regulations, or international agreements governing the entry into or exit from the State of origin, transit, or destination". Hence, irregular migration (entry or transit) may only occur in the context of international border crossings, and we therefore excluded studies that only reported internal migration or internal displacement, but included studies defined as "unspecified" regarding whether migration happened internally or internationally.

- To focus on root causes, three intervention domains relate to the irregularity and decision-making that occurs prior to emigration or during transit (hence before entry into destination countries) (IOM 2019). The fourth intervention domain on legalization of pathways is related to irregular stay in destination countries if it overlaps with migration and movement, such as the opening of regular channels by providing work visas. Policies such as regularization, customs and border control, or enforcement interventions that pertain exclusively to irregular stay, are out of scope.

- We include both migration decisions made on a "voluntary" basis (e.g., due to an individual's desire to seek economic opportunity or a better life) as well as an "involuntary" basis, due to necessity (e.g., forced international displacement caused by conflict, violence, fear of persecution, or human rights violations that may lead individuals to migrate through irregular channels) (UNHCR 2021).

  Because both scenarios may lead to irregularity, we use these distinct terms to maintain consistency with international definitions. In reality, voluntariness and agency of migration decision-making occur on a spectrum (e.g., an individual who agreed to be smuggled but becomes trafficked; an individual who is migrating primarily for economic reasons but has also faced sociopolitical pressures at home) (Triandafyllidou, Bartolini, and Guidi 2019).

- Root causes can operate on a micro, meso, and macro level. Our definitions are aligned with the conceptual and geographical scale of the intervention and of corresponding outcomes. We define micro levels as affecting individuals and households, meso levels as relating to community and the subnational, and macro levels as relating to the national, systemic, structural, and international.

  These definitions differ in part from other driver frameworks such as that developed by Czaika and Reinprecht (2022), whose categories are separated conceptually (i.e., macro-level drivers include those pertaining to demographics, economic, environmental, human development, among others; meso-level drivers include sociocultural factors; and micro-level drivers include individual factors) but do align more with politico-legal constructs that are essential for our focus on irregular migration.

3.1 Interventions addressing root causes and other drivers

Our scope is limited to interventions that address three root causes of irregular migration (Castles et al. 2012; Carling and Talleraas 2016; National Security Council 2021; Rose et al. 2021; IOM 2021), which include: (a) lack of economic opportunities ("economic opportunities and decent work" domain); (b) lack of capacity to adapt to shocks or stressors ("strengthening resilience against shocks and stressors" domain); (c) high levels of violence in origin countries ("building safe communities through violence prevention and intervention" domain); and one domain for determinants related to (d) lack of regular migration channels in destination countries or information and awareness about them ("orderly and safe migration management" domain), as visualized in Table 1. For more information about the underlying conceptual framework and the scope selection process, see Berretta and colleagues (2023).

Table 1: Interventions included

Domain	Intervention	Level	Description
Economic opportunities and decent work	**Active labor-market policies**	Macro, meso	Demand-side interventions that aimed to increase individuals' access to employment and entrepreneurship opportunities. These may include: skills-based interventions such as technical and vocational education training, business skills training, mentorships, internships/apprenticeships, and entrepreneurship workshops; job placement centers and matching programs, and employment pipelines/pathways within communities; wage subsidies; or public works schemes.
	Access to large credit markets	Macro, meso	Interventions to improve or increase access to large capital credit or loans for the purposes of establishing a business or facilitating industry growth. This does not include microcredit or indexed insurance (for microcredit or index insurance, see the "strengthening resilience" domain).
	Decent work policies	Macro, meso, micro	Supply-side interventions that create opportunities for work aimed to be productive and deliver fair incomes, occupationally safe and secure workplaces, social protection benefits (delivered by employers [e.g., health insurance policies or programs provided by employers]. If delivered by government, e.g., unemployment assistance, see the "strengthening resilience" domain), prospects for personal development and social integration, and freedom to express concerns, organize, and participate in decisions that affect workers' lives or treatment.
	Microcredit and microinsurance schemes	Macro, meso, micro	Provision of, or increasing availability and access to, microcredit and/or microinsurance for households, entrepreneurs, or agricultural producers.
	Human capital strengthening interventions (non-food)	Macro, meso, micro	Interventions that financially support human capital development and well-being outcomes directly (e.g., costs of schooling or health services) or indirectly by supporting basic non-food needs, with the intention of bolstering human capital investment. This includes the following: - Cash transfers: providing cash to assist in meeting needs of recipients for the intended purpose of supporting. The intervention could target eligible populations or be universal. Examples include unconditional, labelled transfers (no conditions attached, but explicitly label the purpose of cash transfer), and conditional cash transfers. Universal basic

Domain	Intervention	Level	Description
			income, retirement or senior citizen pensions, and giving cash universally and unconditionally to citizens. Health insurance or interventions that increase access to health services. *If an intervention is "cash for work" (cash employment of participants in public works), it applies to the "employment assistance" intervention category of the "strengthening resilience" domain. * If an intervention supports food-/nutrition-related basic needs, it applies to the "food and nutrition interventions" category under the "strengthening resilience" domain.
Strengthening resilience against shocks and stressors[1]	Disaster-risk financing policies and index-based insurance	Macro, meso	Public financing policies that aim to manage disaster risks. Examples include risk transfer instruments (e.g., public agricultural, index-based livestock or weather-based insurance policies), loans (e.g., public contingent credit, borrowing and concessional financing), or revenue generation/fiscal policies (e.g., co-financing incentives for in-country stakeholders).
	Early warning systems	Macro, meso	Early warning preventative responsive policies that provide information to households and communities about potential risks and how to face them. *If interventions adopt a new technology or technical assistance, including renewable energy and energy efficiency, they will belong to the "technology-based assistance" intervention category.
	Natural resource management	Meso, micro	Community-based, natural-resource management programs that bring together various sections of civil society to care for a natural resource. *If interventions adopt a new technology or technical assistance, including renewable energy and energy efficiency, they will belong to the "technology-based assistance" intervention category.
	Technology-based assistance	Macro, meso, micro	Providing technology-based materials to improve risk reduction. Examples include new technology-based crop failure safeguards, improved seeds

[1] See Appendix E for a list of covariate or macro-level shocks/stressors. Each intervention category should have been designed to prepare, manage, or recover from one or more of these shocks/stressors.

Domain	Intervention	Level	Description
			(flood-, salt-, or temperature-tolerant), water purification/supply, water harvesting, recycling, drip irrigation, and water storage. This category also includes renewable energy and energy efficiency-focused materials.
	Infrastructure (re)construction and maintenance	Macro, meso	This includes the construction, maintenance, and reconstruction of environmental infrastructure, including the reconstruction of market infrastructure (e.g., road to markets, agricultural facilities) for post-disaster recovery.
	In-kind social assistance	Macro, meso, micro	Direct provision of goods or services, or subsidies to increase access (e.g., social security, provision of non-food items, commodity vouchers, agriculture recovery and restoration programs). This does not include health insurance schemes.
	Food and nutrition interventions	Macro, meso, micro	Direct provision of food-focused goods or subsidies. Examples include commodity vouchers, food stamps, nutritional supplementation, and agricultural inputs (e.g., seeds, machine transfer). *If an intervention provides new technology-based materials (e.g., drought-tolerant seed transfer), it belongs to the "technology-based assistance" intervention category. *If an intervention is 'food/voucher for "work" (employing participants for public work and giving them food or voucher), it applies to the "employment assistance" intervention category.
	Employment assistance	Macro, meso, micro	Interventions providing cash or in-kind support for employment or during unemployment. Examples include public works (e.g., cash for work, food for work, and vouchers for work), employment guarantee schemes, and unemployment assistance in the context of shocks/stressors.
	Local coordination mechanisms in support of service provision	Meso, micro	Activities/mechanisms that bring uncoordinated and disparate actors together to collaborate and integrate provision of resilience-strengthening services for all, or eligible, populations. Examples: hotlines and referral systems (e.g., link and referral programs) that link vulnerable and/or refugee populations to different social protection providers and qualifying services of which they may not have been aware (e.g., humanitarian assistance to social protection, social protection to other social protection providers, or specific policies/programs to others); policies or coordinating groups that bring together ministries working on different issues affecting the same populations (e.g., labor, welfare or social security,

Domain	Intervention	Level	Description
			women and children, emergency response). This does not include health or educational services.
	Services communication and advocacy	Macro, meso, micro	Communication, awareness-raising, dissemination or public campaigns to increase knowledge of, access to, or uptake of social protection services. * If communication or awareness campaigns relate to local opportunities, legal pathways, labor rights, etc., they belong in the "orderly and safe migration" domain.
Building safe communities through violence prevention and intervention	Diversion to probation or appropriate services	Macro, meso, micro	Arrest and pre-trial diversion programs that share the objective of diverting populations with mental health issues out of the criminal justice system and into behavioral healthcare and other more appropriate services.
	Psychosocial support and education programs	Macro, meso, micro	Targeting groups or individuals who are potentially vulnerable to engagement in crime (e.g., gangs, drugs, gender-based violence or other crime) with educational interventions and school-based programming to promote alternatives to violence and crime, or mental health and psychosocial support (e.g., cognitive behavior therapy, aggression replacement therapy, family counselling-based initiatives).
	Preventative programs for ex-offenders	Macro, meso, micro	In-facility and out-of-facility rehabilitation interventions to support prisoners to integrate effectively into society. These may include vocational training, economic interventions (e.g., employment training programs), life skills provision, or psycho-social support, and may take place outside of correctional institutions.
	Social services for victims of crime and violence	Macro, meso, micro	The creation and resourcing of services and interventions that can provide crisis intervention, emergency treatment, and referrals for services (physical or mental support) to adult and child victims that have been referred by a relevant justice actor or institution. This could include court-ordered placement of children into social services or mental health support for crime victims referred by a victims' advice bureau. Also includes the use and strengthening of approaches to engage the person involved in addressing the problems, specifically in relation to social care.
	Protection for at-risk legal actors and political prisoners, and witness-protection services	Macro, meso, micro	Interventions to protect either justice actors or justice seekers from any harm that may result from their attempts to seek justice for themselves or others. Interventions to support the fair trial and safe treatment of political prisoners, or to ensure that witnesses are not harmed for their willingness to testify.

Domain	Intervention	Level	Description
	Society-led crime prevention and reporting initiatives	Meso, micro	Systems- or citizen-led interventions to support reporting and prevention of crime in their locality. Locally led campaigns to promote anti-violence and anti-crime values, including anti-gender-based violence. Strengthening the ability of actors in no-legal services who encounter victims of crime and abuse to notice and report issues (e.g., teachers trained to recognize child abuse in pupils). Includes: Neighborhood watch schemes, school or community anti-crime or anti-violence campaigns, and reporting and referrals by non-legal service providers.
	Behavior change communication against violence	Macro, meso, micro	Communication to address harmful norms related to discrimination and violence (e.g., gender-based violence, stigmatization of health conditions), and promote rights-affirming behaviors (e.g., willingness to report violence, treating people with respect). Activities may include classes or workshops (e.g., on destigmatisation of HIV), community mobilization activities (e.g., to combat gender-based violence), and information or awareness campaigns (e.g., using traditional or non-traditional media).
Orderly and safe migration management	**Information campaigns on legal rights, risks of irregular migration, legal alternatives, and/or working conditions**	Macro, meso, micro	Information on legal rights, workers' rights, and working conditions, such as: visa recruitment processes; fees; indicators of abuse, exploitation, and/or contract violations; risks of irregular migration during the journey, return, or within destination country; and legal alternatives to irregular migration (local employment opportunities or legal pathways). Booklets, meetings, counselling, tours, mass media, posters, workshops, and seminars might be used to disseminate the information.
	Legal pathways	Macro, micro	Creating/expanding legal migration pathways into receiving countries. This includes: access to mobility channels such as temporary, seasonal, or sector work-based visas, long-term visas, humanitarian visas; other incentives (travel subsidies); bilateral labor agreements or policies to regulate migration flows; and administrative capacity-focused interventions (e.g., tools or mechanisms to reduce administrative costs, improve efficiency or performance of processing systems, streamline asylum processes at ports). Could be delivered by governments or non-governmental organizations.

3.2 Migration and forced displacement outcomes

The primary focus of this EGM is to examine irregular migration outcomes. We excluded intermediate development outcomes that may determine whether an intervention works (e.g., an active labor-market policy increases income). However, we include intermediate migration outcomes such as aspirations, intentions, and perceptions that are theorized as precursors to actual migration behavior. Irregular migration interventions are likely to have the most direct impact on these outcomes, whereas final migration outcomes also depend on factors beyond a program's control, such as migration infrastructure and availability of legal pathways.

Observed migration behavior was our "final outcome." However, studies often did not distinguish whether migration was internal versus international, or, if the latter, whether it was occurring through regular or irregular channels. We therefore include a subcategory—"unspecified"—so as not to exclude potentially relevant outcomes.

Table 2: Outcomes included

Final outcomes / observed migration behavior		Definition
Any migration (micro)	Unspecified	The individual is no longer residing in their usual place of residence. Unspecified as to whether the study evaluates internal or international migration.
	International – unspecified	The number or rate of movement of persons (individuals/households) from their place of usual residence and across international borders to a country of which they are not nationals. Unspecified as to whether this movement is taking place outside the law, regulations, or international agreements governing exit from origin countries.
	International – regular	Movement of persons that occurs in compliance with the laws of the country of origin, transit, or destination.
	International – irregular	Movement of persons that occurs outside the laws, regulations, or international agreements governing entry into or exit from the state of origin, transit, or destination.
	Forced displacement – unspecified	Movement due to persecution, conflict, violence, and/or human rights violations. Only code if unspecified as to whether internal or international.
	Forced displacement – international	International movement due to persecution, conflict, violence, and human rights violations.
International migration flow (macro)	Unspecified	The number of international migrants arriving in a country (immigrants) or the number of international migrants departing from a country (emigrants) over the course of a specific period. Unspecified to whether regular or irregular.
	Regular	The number of international migrants arriving in a country (immigrants) or the number of international migrants departing from a country (emigrants) over the course of a specific period, through means that are in compliance with countries of origin, transit, or destination.

Final outcomes / observed migration behavior		Definition
	Irregular	The number of international migrants arriving in a country (immigrants) or the number of international migrants departing from a country (emigrants) over the course of a specific period through mechanisms outside of the laws, regulations, and agreements governing entry/exit.
International migration stock (macro)	Unspecified	The total number of international migrants present in a country/area/region at a particular point in time who have changed their country of usual residence. Unspecified as to whether it is regular or irregular.
	Regular	The total number of international migrants present in a country/area/region at a particular point in time who have changed their country of usual residence through means that are in compliance with countries of origin, transit, or destination.
	Irregular	The total number of international migrants present in a country/area/region at a particular point in time who have changed their country of usual residence through mechanisms outside of the laws, regulations, and agreements governing entry/exit.
Intermediate outcomes		
Intention to migrate (micro)	Unspecified	Individual plans to move in the next 12 months. Unspecified as to whether it is in compliance with, or outside of, the laws, regulations, and agreements governing entry/exit of people.
	Regular	Individual plans to move in the next 12 months through means that are in compliance with the laws, regulations, and agreements governing entry/exit in countries of origin, transit, or destination.
	Irregular	Individual plans to move in the next 12 months through mechanisms outside of the laws, regulations, and agreements governing entry/exit in countries of origin, transit, or destination.
Knowledge, perceptions, attitudes, and expectations (meso, macro)	Perception/psychosocial condition of current situation	The desire for change, feelings of inescapable stagnation, and challenges due to conditions that cannot be addressed. Only include if the study also examines another intermediate or final migration outcome; exclude if the outcome does not relate to migration.
	Expectations, awareness, knowledge, or attitudes on risks, benefits, costs, and/or consequences of movement through irregular channels	Outcomes relating to what is understood about the potential costs, benefits, and/or risks of irregular migration (e.g., physical risks or harm, expulsion, exploitation risks, labor opportunities, wages in destination countries, smuggling or recruiter fees).
	Knowledge or awareness of legal pathways, legalization processes, or asylum-seeking processes	Any knowledge about regular migration pathways (schemes, programs, processes, or other options).
	Knowledge or awareness of migrant labor rights	Any knowledge of worker's rights. This may include those relating to labor or contract violations, labor exploitation, freedom from discrimination, freedom of movement.

Note that not all empty cells in the map represent meaningful evidence gaps. For instance, knowledge, awareness, attitudes, and expectations related to irregular migration are most directly related to the "orderly and safe migration management" intervention category, and less likely to be associated with interventions in other domains.

4. Methods

We used recognized and standard methods in the development of this EGM (Snilstveit et al. 2016, 2017; White et al. 2020) The specific search, screening, and data extraction methods are described in detail in the published protocol (Berretta et al. 2023) and in Appendixes A and B.

Below we summarize the search strategy and the criteria to include and exclude studies from the EGM.

4.1 Inclusion and exclusion criteria

Table 3 summarizes key relevance criteria that were used to determine inclusion or exclusion, categorized using the PICOS scheme: population, interventions, comparison, outcomes and study designs.

Table 3: Summary criteria for studies to be included in the EGM

Criteria	Description
Population	Studies implemented in low- and middle-income countries. High-income countries were included if the intervention involved the creation or expansion of legal migration pathways in receiving countries.
Interventions	We included relevant interventions as listed in Section 3. These are organized into four interventions domains related to: (a) economic opportunities and decent work; (b) strengthening resilience against shocks and stressors; (c) building safe communities through violence prevention and intervention; and (d) orderly and safe migration management. Table 1 provides a full list of interventions and outcomes.
Comparison	A study must have included a comparison group, even if it was non-counterfactual (e.g., control group receiving no intervention, or receiving another intervention).
Outcomes	We included relevant outcomes as listed in Section 3. These include final and intermediate migration outcomes.
Study designs	We included both IEs and SRs. For IEs, we included studies using an experimental or quasi-experimental design. SRs that synthesized the effects of an intervention on outcomes were included (detailed descriptions of included study designs are available in Appendix A).
Language	Studies in any language were eligible but the search terms used were in English.
Publication date	All studies were available from 1990 onwards.
Status of studies	We included ongoing[2] and completed IEs and SRs. These included prospective study records, protocols, and trial registries.

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[2] Ongoing studies, such as protocols, were included when they provided sufficient information to meet all criteria. This includes an explanation of primary and secondary outcomes, as well as the intervention to be evaluated.

4.2 Search strategy

We worked with an information specialist to devise a search strategy comprising key words and Boolean operators for the " economic opportunities and decent work" and "orderly and safe migration management" domains (a and d). We leveraged pre-existing search strategies that were developed for the "strengthening resilience" and "building safe communities" domains (b and c) and ran updated searches (Berretta 2022; Sonnenfeld et al. 2023) These searches were conducted in electronic databases for academic literature.

For the gray literature, we conducted searches in a list of databases, repositories, and institutional websites. Gray literature searches are included to help mitigate publication bias (i.e., null results are less likely to be published in peer-reviewed journals) and to find publications that are not published in academic peer-reviewed databases (e.g., working papers, reports, books). A complete list of searched databases, websites, and search terms is available in Appendix B.

We also implemented forward and backward citation tracking of included papers. Through forward citation tracking, we searched for relevant papers that cited the study of interest. We used the software Publish or Perish® and Citation Tracer® to facilitate this search. With backward citation tracking, we reviewed eligible studies from the bibliographies of included studies. Finally, we published a public call for relevant papers in 3ie's Evidence Matters blog.[3]

4.3 Coding study characteristics

We extracted data from the 91 IEs and seven SRs such as title, interventions, outcomes, study design, funding agencies, equity and gender approaches, and types of data used. A single experienced coder extracted the data using a predefined form on the 3ie Development Evidence Portal[4] platform. We implemented quality assurance measures, such as manual checking of codes for all studies, to confirm the coding accuracy for the interventions and outcomes within our framework.

We conducted critical appraisals of the seven SRs following the practices suggested by Lewin and colleagues (2009) and using the 3ie appraisal checklist—an adapted version of the Specialist Unit of Review Evidence checklist (SURE 2018).[5] The appraisal tools assess the methodological rigor of included SRs according to criteria covering the most common areas where bias can be introduced.

Based on the SR's adherence to these methodological and reporting standards, we rated them as high, medium, or low confidence, drawing on guidance provided by Snilstveit and colleagues (2017). If there were methodological or reporting gaps in selection criteria and process, comprehensive search strategy, risk of bias assessments, discussion of heterogeneity, or synthesis methods, reviews were assessed as low confidence. If gaps were partially observed or unlikely to bias results, reviews were assessed as medium confidence.

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[3] Blogpost

[4] https://developmentevidence.3ieimpact.org/

[5] The adapted SURE checklist for critical appraisal of SRs is presented in Appendix H.

Reviews that addressed all criteria or acknowledged and reflected limitations in findings were assessed as high confidence. See Appendix H for the critical appraisal tool. We did not critically appraise IEs as this activity is typically beyond the scope of EGMs.

5. Analysis of evidence on the effects of root cause and driver programming on irregular migration
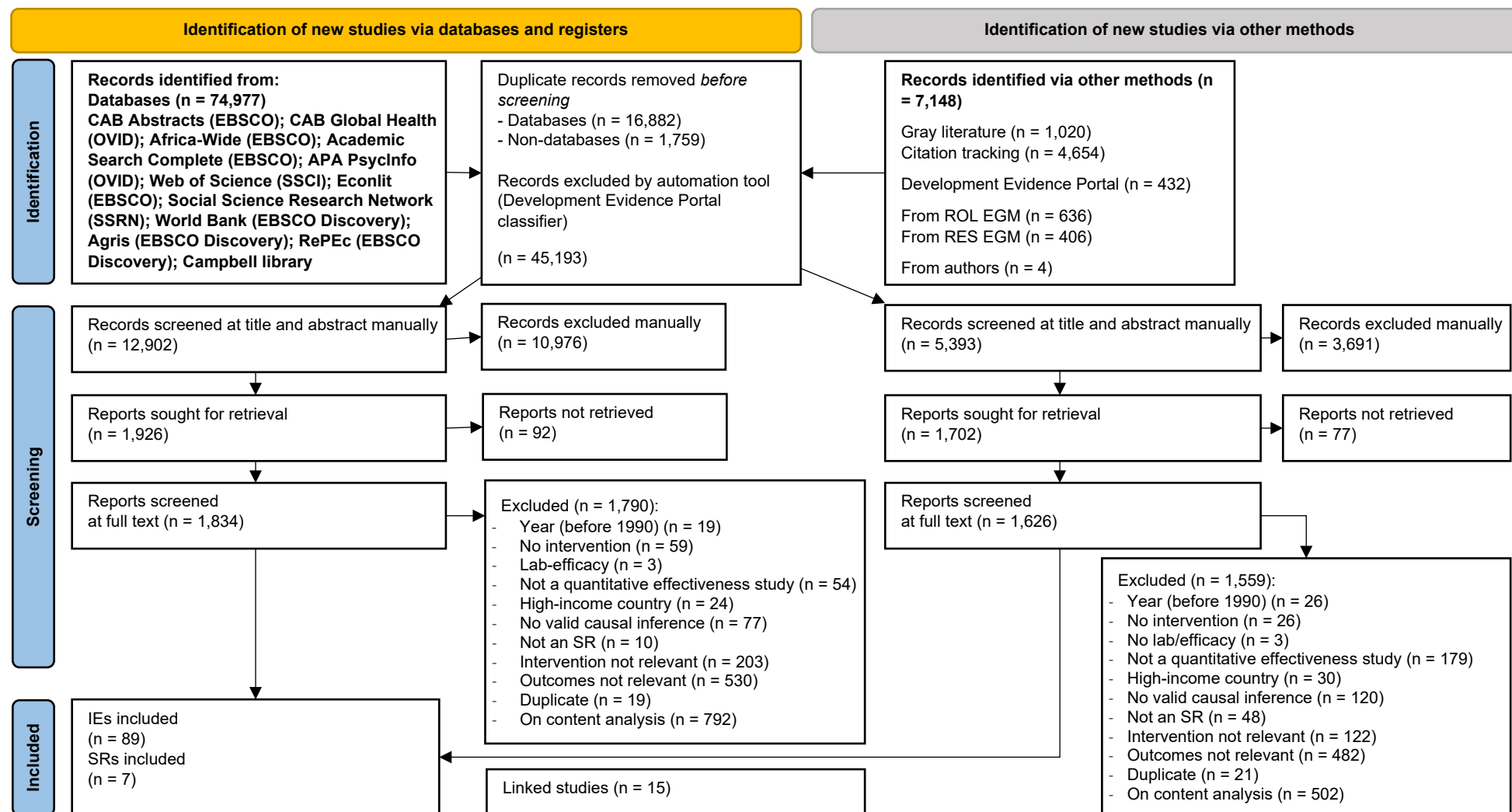
5.1 Volume of evidence

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Page et al., 2021), the EGM flowchart in Figure 1 details the search and screening process. After implementing the systematic search strategy between December 2022 and April 2023, we identified a total of 82,125 records. After deduplication, we were left with 63,484 identified records. We used independent and duplicate manual screening and EPPI-Reviewer® 4's machine learning functions based on 3ie's Development Evidence Portal of previously screened literature (Thomas et al. 2022). This led us to exclude 45,193 irrelevant studies with a predicted likelihood of relevance of 12% or lower based on titles and abstracts. Approximately 6,000 studies were ranked between 10–12%; of these, we manually checked 10% and confirmed exclusion.

The most common reasons for manually excluding studies at the title and abstract screening stage was due to: lack of reference to an intervention in the abstract (n = 5,571); irrelevance of the intervention (n = 4,108); lack of quantitative methods to examine the intervention effects (n = 1,362); and implementation of root cause intervention domains in high-income countries (n = 1,152).

We screened a total of 3,460 studies at full text (database and non-database sources aggregated); most of these were excluded through content analysis (n = 1,294), in which we ran searches within the document for migration and derivative terms. If the study failed to mention a key migration term, we automatically excluded the paper.

After the content screening, studies were primarily excluded due to irrelevant outcomes (n = 1,012), irrelevant interventions (n = 325), not being a quantitative effectiveness study (n = 233), or a lack of valid study design (n = 197). Overall, we included 89 IEs and 7 SRs and identified 15 linked studies. Appendix A provides a detailed overview of the methods used. The online map is available here.

Figure 1: Preferred reporting items for SRs and meta-analyses (PRISMA) diagram

| **Identification of new studies via databases and registers** | **Identification of new studies via other methods** |

Identification

Records identified from:
Databases (n = 74,977)
CAB Abstracts (EBSCO); CAB Global Health (OVID); Africa-Wide (EBSCO); Academic Search Complete (EBSCO); APA PsycInfo (OVID); Web of Science (SSCI); Econlit (EBSCO); Social Science Research Network (SSRN); World Bank (EBSCO Discovery); Agris (EBSCO Discovery); RePEc (EBSCO Discovery); Campbell library

→

Duplicate records removed *before screening*
- Databases (n = 16,882)
- Non-databases (n = 1,759)

Records excluded by automation tool (Development Evidence Portal classifier)

(n = 45,193)

Records identified via other methods (n = 7,148)

Gray literature (n = 1,020)
Citation tracking (n = 4,654)

Development Evidence Portal (n = 432)

From ROL EGM (n = 636)
From RES EGM (n = 406)

From authors (n = 4)

Screening

Records screened at title and abstract manually
(n = 12,902)
→
Records excluded manually
(n = 10,976)

Records screened at title and abstract manually
(n = 5,393)
→
Records excluded manually
(n = 3,691)

Reports sought for retrieval
(n = 1,926)
→
Reports not retrieved
(n = 92)

Reports sought for retrieval
(n = 1,702)
→
Reports not retrieved
(n = 77)

Reports screened
at full text (n = 1,834)
→
Excluded (n = 1,790):
- Year (before 1990) (n = 19)
- No intervention (n = 59)
- Lab-efficacy (n = 3)
- Not a quantitative effectiveness study (n = 54)
- High-income country (n = 24)
- No valid causal inference (n = 77)
- Not an SR (n = 10)
- Intervention not relevant (n = 203)
- Outcomes not relevant (n = 530)
- Duplicate (n = 19)
- On content analysis (n = 792)

Reports screened
at full text (n = 1,626)
→
Excluded (n = 1,559):
- Year (before 1990) (n = 26)
- No intervention (n = 26)
- No lab/efficacy (n = 3)
- Not a quantitative effectiveness study (n = 179)
- High-income country (n = 30)
- No valid causal inference (n = 120)
- Not an SR (n = 48)
- Intervention not relevant (n = 122)
- Outcomes not relevant (n = 482)
- Duplicate (n = 21)
- On content analysis (n = 502)

Included

IEs included
(n = 89)
SRs included
(n = 7)

Linked studies (n = 15)

15

5.2 Publication trends in the evidence base

We found no IEs or SRs available prior to 2004, but the evidence base has grown steadily over the last decade. More than three quarters of the evidence base comprise studies first available between 2014 and 2023 (n = 77). Of these, 26 percent (n = 20) are ongoing IEs (published protocols or registries).

There is an observable increase in the number of studies available each year since 2014, with the largest number of IEs (n = 14) published or drafted in 2021 (Figure 2). The number of IEs available dropped in 2020 (n = 10), possibly due to COVID-19 disruptions affecting all industries.

All seven SRs we identified were published between 2009 and 2019. Therefore, the 27 completed IEs we identified from 2020 and onwards are not part of any synthesis studies, to our knowledge. This reflects a synthesis gap. We would expect additional synthesis to emerge along with the increasing number of IEs.

Figure 2: Number of IEs and SRs by year
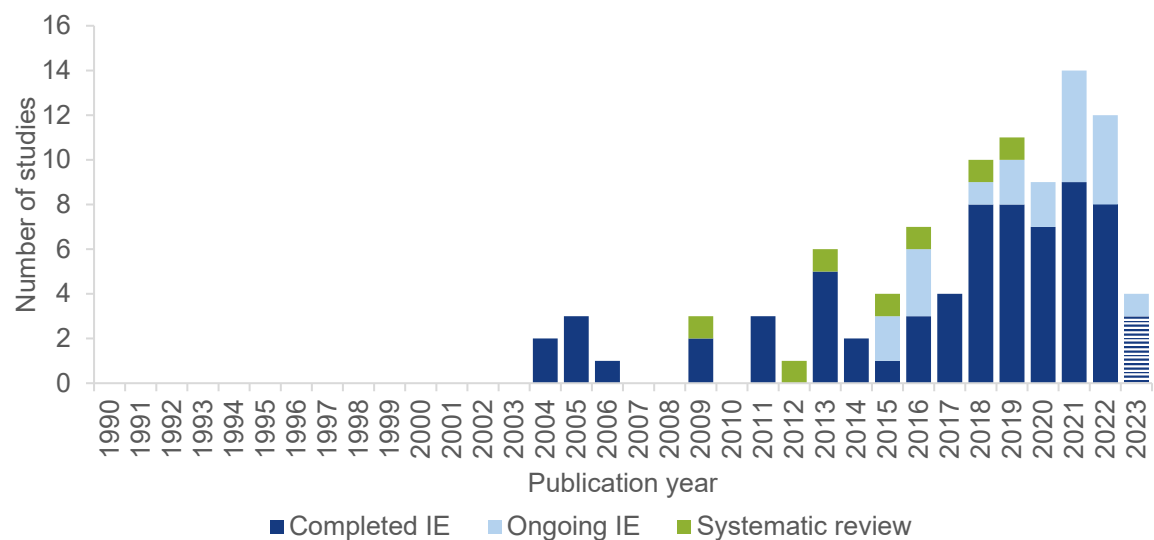
Note: The figure for 2023 does not reflect the full year as the literature search concluded in April 2023.

5.2.1 Intervention and outcome coverage

We present the results of our evidence mapping in terms of clusters of evidence or gaps. The former are intervention and outcome categories where we can observe multiple IEs; the latter are categories in our framework where we found no studies available within the timeframe of our search (1990–2023).

Evidence gaps exist within many intervention categories

The studies reporting migration outcomes are concentrated around three intervention categories: human capital strengthening; active labor market policies; and information campaigns on legal rights, risks of irregular migration, legal alternatives, and/or working conditions.

The evidence base is concentrated within two domains: (a) economic opportunities and decent work (n = 64) and (d) orderly and safe migration management (n = 28). Ten studies fall within the (b) strengthening resilience against shocks and stressors domain.

We found no studies for the domain on (c) building safe communities through violence prevention and intervention. We present these results in Figure 3.

In the first domain (economic opportunities and decent work), we found evidence clusters for the intervention categories relating to human capital strengthening (n = 41) and active labor market policies (n = 16). Human capital strengthening interventions are predominantly represented by cash transfer schemes—for example, large universal programs such as Mexico's PROGRESA (Angelucci 2005; Stecklov et al. 2005; Tirado-Alcaraz 2014; Araujo and Macours 2021), other targeted cash transfers offered seasonally (Sibson 2020), or humanitarian cash transfers (Özler et al. 2021).

The studies coded under active labor market policies examined vocational training targeting youth (Ahn et al. 2020; Bandiera et al. 2020; Bah et al. 2023) or apprenticeship placements with master craftspeople (Cho et al. 2013; Das 2017; Hardy et al. 2019). Within the "economic opportunities and decent work" domain, we did not find any studies evaluating the impact of access to large credit markets and found only two studies in the decent work category, and five for the microcredit and microinsurance schemes category.

Within the (d) orderly and safe migration management domain, we found an evidence cluster (n = 21) for interventions pertaining to information campaigns on legal rights, risks of irregular migration, legal alternatives, and working conditions. These interventions were commonly delivered either through trainings (Battiston, La Ferrara, and Corno 2019; Scacco, Yan, and Humphreys 2019; Scacco et al. 2021; Florio 2022) or in the form of peer-to-peer or role-model information sharing (Mesplé-Somps and Nilsson 2021; Tjaden and Dunsch 2021). Within this domain, we also found seven studies pertaining to the creation of legal pathways, particularly in destination countries such as Italy (Dalla Pellegrina, Saraceno, and Suardi 2018), the US (Abarcar and Theoharides 2021), and Ecuador (Freier and Holloway 2019).

We found 10 studies under the (b) *strengthening resilience against shocks and stressors* domain. The studies evaluated disaster-risk financing policies and index-based insurance interventions, technology-based assistance, in-kind social assistance, and employment assistance. Four studies evaluated multiple component interventions, such as a packaged intervention combining the provision of resistant seeds and weather insurance for natural disasters (Diagne and Cabral 2017; Fuller and Lain 2018), or community disaster management planning, adaptive crop management, and rotating savings and financial literacy (Scantlan, Petryniak, and Tamang 2018; Fuller and Lain 2018).

Finally, we found absolute primary evidence gaps in the entire domain of (d) building safer communities through violence prevention and intervention. This may be due to the challenges of measuring long-term changes within an IE's observation period and the time lag in which changes would affect an individual's migration decisions. However, given that security, safety, and violence are considered the core root causes of several large-scale policies, and are intrinsically linked to forced displacement (Berretta et al. 2023), more evidence evaluating these interventions' effects on migration outcomes is urgently needed.

The largest evidence gaps fall within the domain of interventions aimed at building safe communities through violence prevention and intervention (no studies), and the domain

of interventions aimed at strengthening resilience against shocks and stressors (10 studies).

**Figure 3: Number of included studies by intervention category**
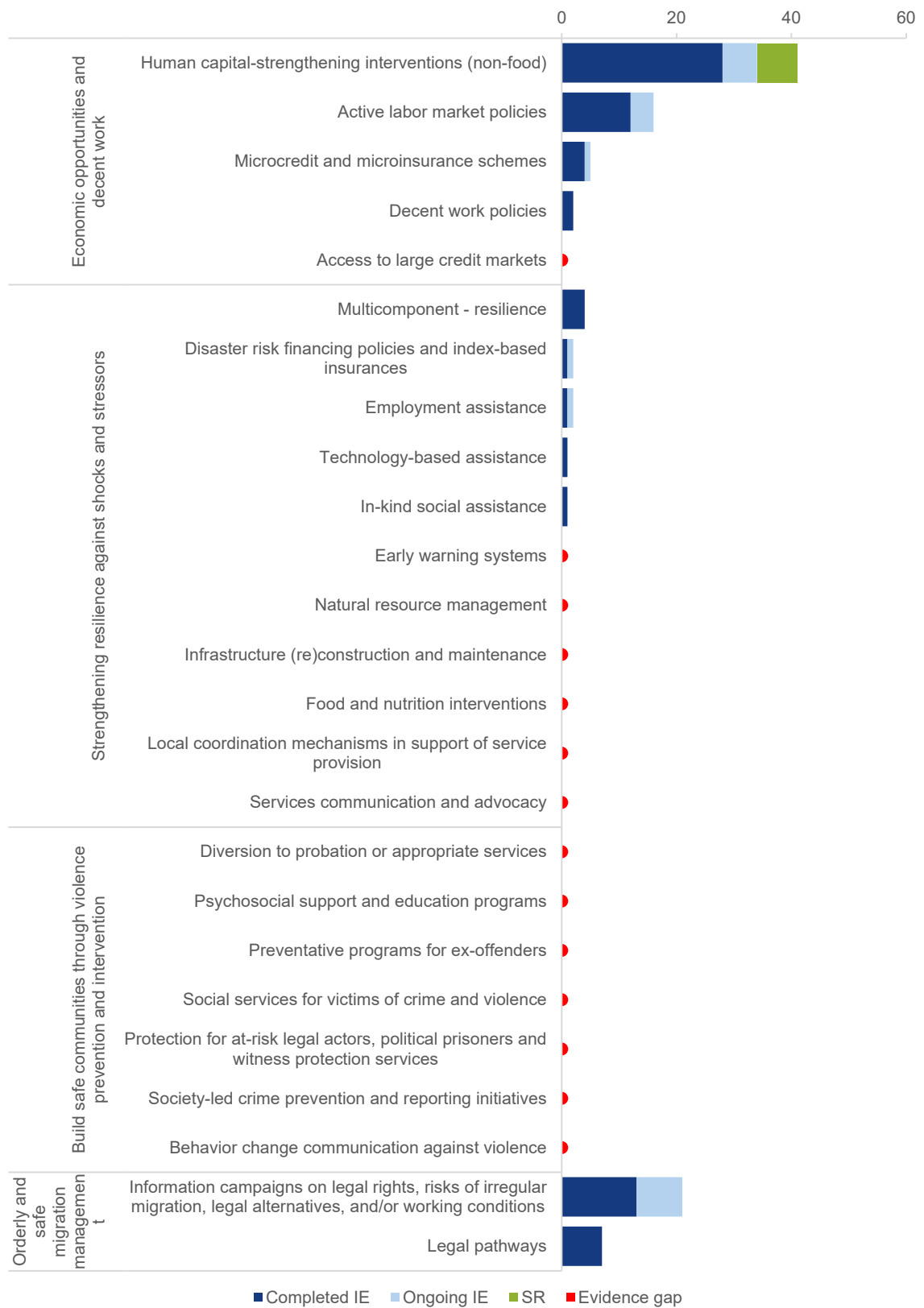
Note: The total of the values displayed will be larger than the number of studies identified, reflecting a study that may evaluate multiple interventions separately.

Evidence gaps are more pronounced when limited to migration-focused interventions.
Only one third of the studies in this EGM evaluated interventions specifically targeting potential migrants.

The analysis above pertains to the body of evidence that examines any migration outcome that was part of our inclusion criteria. However, in most instances, the primary focus of interventions was not related to migration; migration data were only collected alongside a wide range of socioeconomic outcomes. We therefore screened studies for explicit mention of migration as a primary objective of the intervention, or for targeting migrant populations and/or those at risk of irregular migration (Figure 4).

When limited to only migration-focused interventions, the breadth and depth of the evidence base significantly decreases. Unsurprisingly, we still found evidence clusters relating to the domain of "orderly and safe migration management." However, there were far fewer evidence clusters in all remaining domains. In particular, the number of studies within the "economic opportunities" and "resilience" domains dropped, and we observed even more primary evidence gaps across intervention categories. These results underscore the urgent need for effectiveness evidence, particularly of interventions that are the focus of large-scale programming efforts.

Figure 4: Number of included studies by intervention category that examine programming explicitly focused on migration or migrant populations
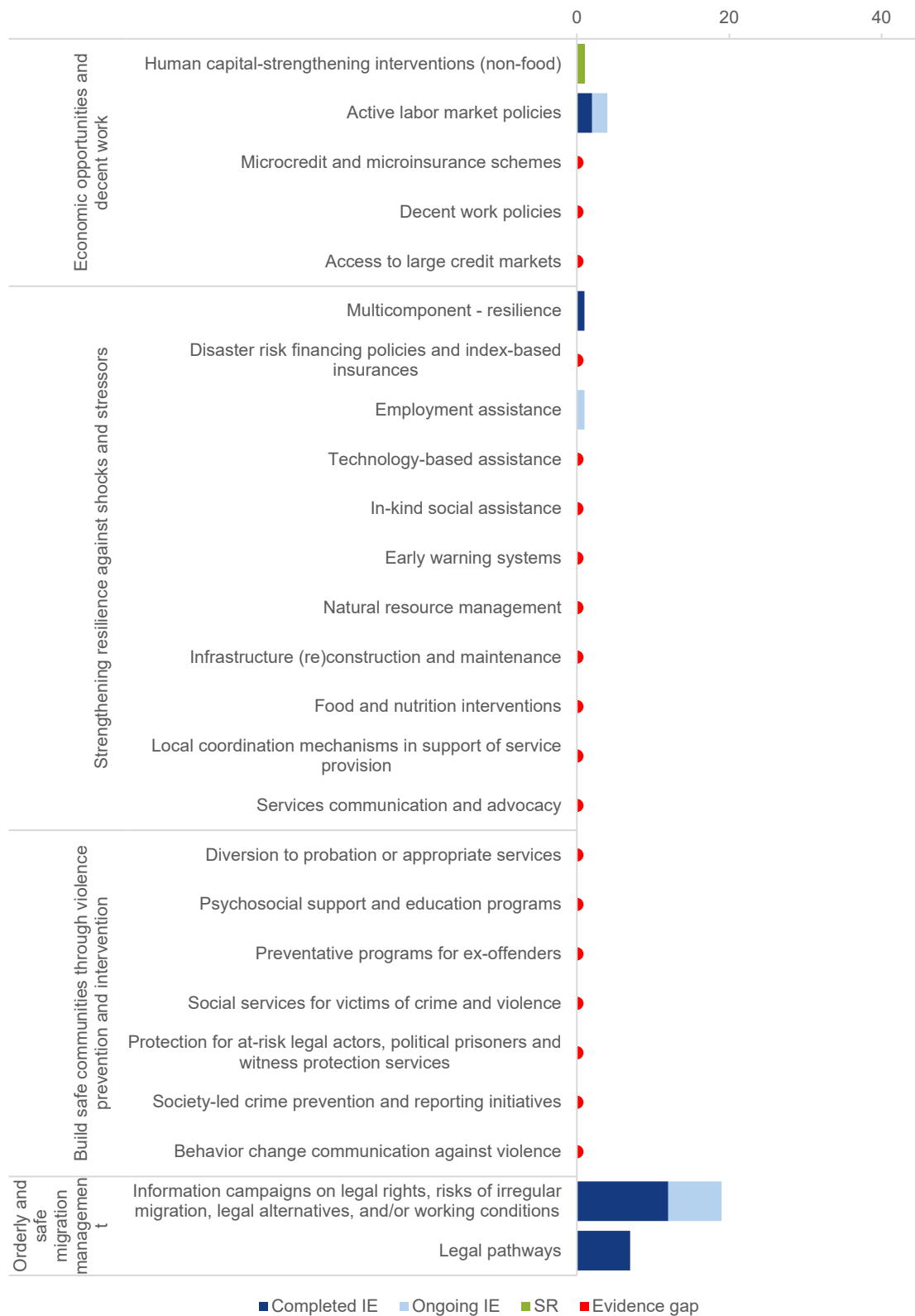
Note: The human capital strengthening interventions (non-food) SR (Adhikari and Gentilini, 2018) included other forms of social assistance—transfers that are explicitly conditioned on spatial mobility. These interventions met inclusion criteria for "targeting migration." We found no IEs in this category because individual studies from the review were excluded due to geographical focus or outcome.

Most studies do not measure outcomes on irregular migration
Irregular migration is an under-examined outcome within the evidence base. We found no studies examining forced displacement outcomes.

Overall, there were few IEs that explicitly measured irregular migration outcomes (n = 8 completed IEs), and there were no identified studies on forced displacement. Most studies (n = 41) reported measures of migration without specifying whether it was internal or international, or regular or irregular (Figure 5). These numbers are attributable to the evidence cluster from interventions on information campaigns and legal pathways (n = 25).

The remaining studies evaluated interventions that aim to address limited economic opportunities, inadequate resilience to shocks and stressors, and safety and violence in communities. The second most reported outcome was on international migration, but did not specify whether this occurred through regular or irregular channels (n = 21).

We found 24 studies examining migration as a primary outcome even if the intervention did not target human mobility. For example, Molina and colleagues (2020), Sibson (2020), Angelucci (2013), and Winters and colleagues (2009) evaluated the effects of cash transfers on migration in Honduras, Niger, Mexico, and Nicaragua, respectively. However, nearly half (n = 42) of the included studies only look at migration outcomes in their secondary analysis. Therefore, even for intervention-outcome pairs where we observe evidence clusters, there is still a need for more targeted research assessing the effectiveness of root-causes programing.

Most of the studies reported measures of migration without specifying whether it was regular or irregular; internal or international.

Figure 5: Number of included studies by outcome group
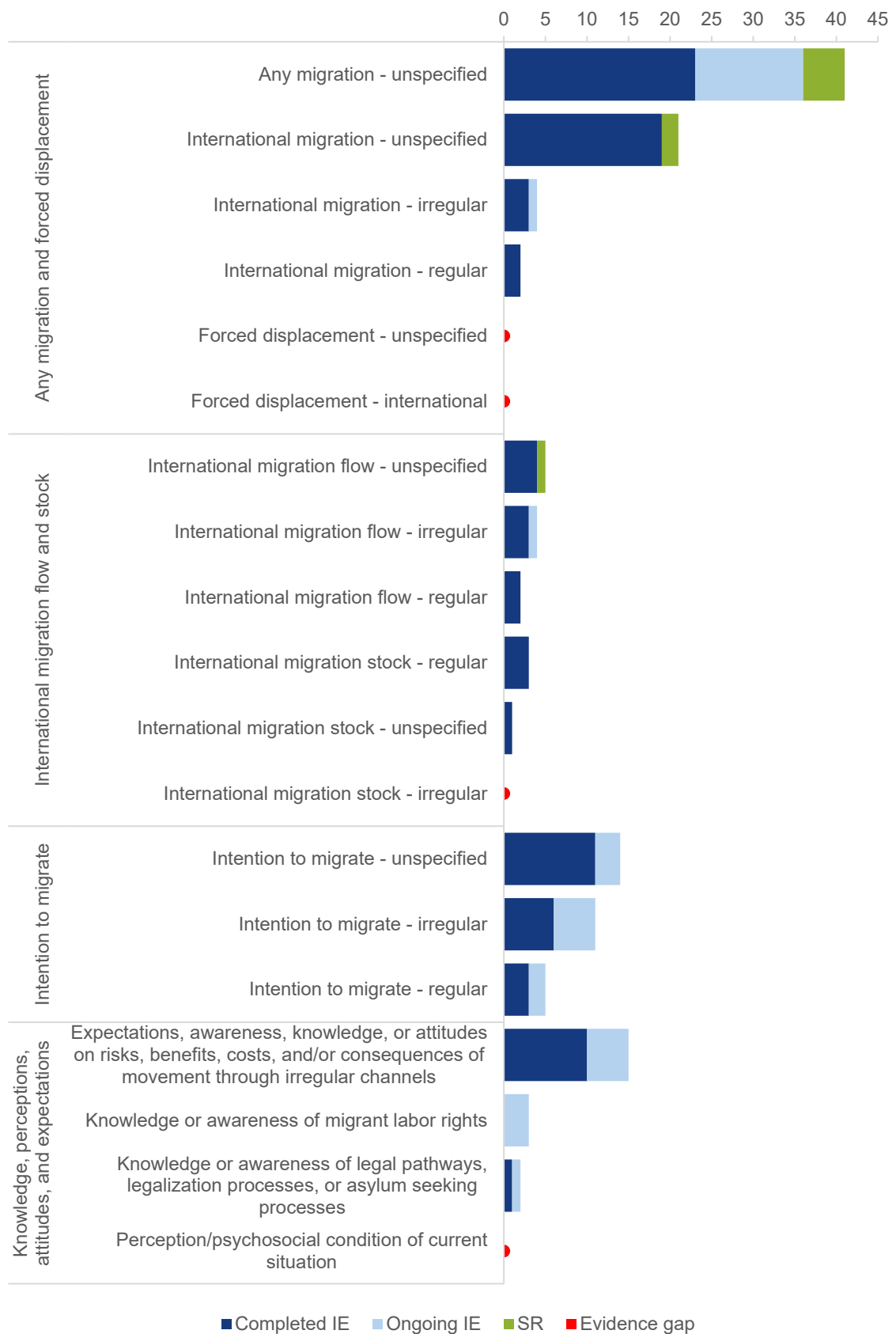
Note: The total of the values displayed will be larger than the number of studies identified, reflecting that a study may evaluate outcomes in more than one of our categories.

5.2.2 Geographical distribution of IEs

Most IEs were from Sub-Saharan Africa (n = 37), Latin America and the Caribbean (n = 19), South Asia (n = 14), and East Asia and the Pacific (n = 13). The most frequently evaluated countries were Mexico (n = 12), Nigeria (n = 7), the Philippines (n = 5), and Ghana (n = 5; Figure 6). For Sub-Saharan Africa and Latin America and the Caribbean, there has been a noticeable and consistent increase in evidence since 2008 and 2004, respectively (Figure 7).

These numbers are driven by studies evaluating human-capital strengthening interventions in Latin America and information campaigns about the risks of irregular migration in Sub-Saharan Africa. The evidence base in Latin America is driven by evaluations from PROGRESA in Mexico. Aside from these studies, there is limited coverage of evidence across the rest of the region. We found two IEs in Nicaragua, two in Guatemala, and one each in Dominica, the Dominican Republic, Honduras and Ecuador.

For the "orderly and safe migration management" interventions domain, our we included high-income countries as receiving countries if there was evaluative evidence on interventions that create or expand legal migration pathways. We found three studies conducted in high-income receiving countries: the United States (n = 1), the United Arab Emirates (n = 1), and Italy (n = 1).
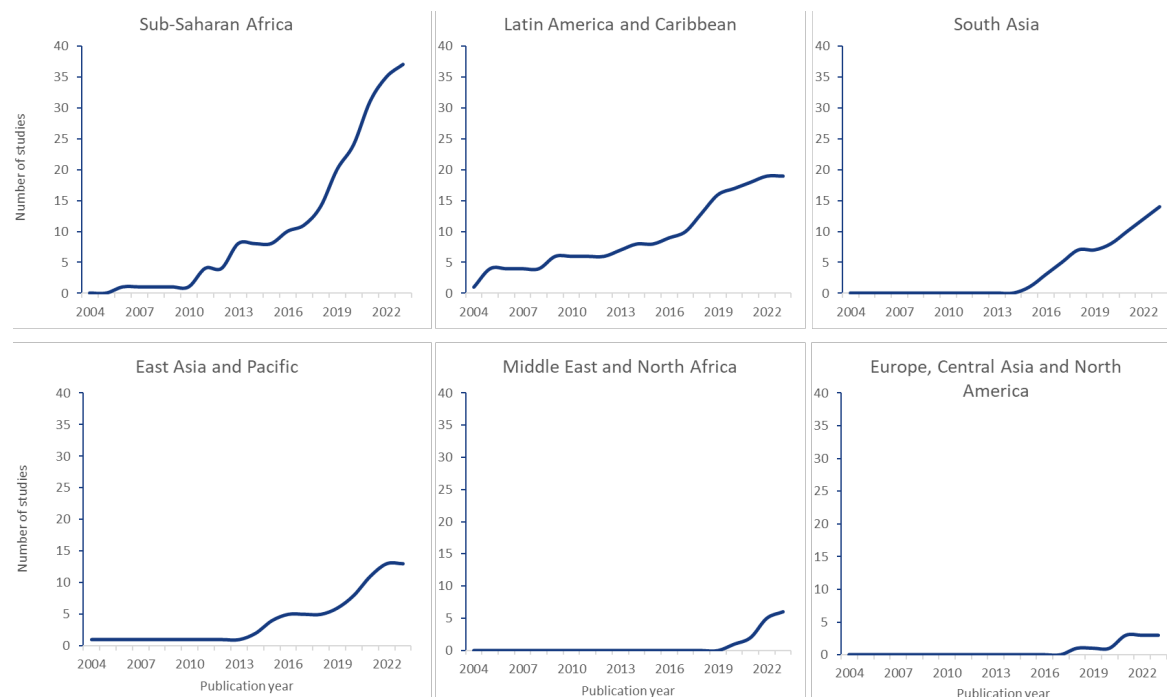
However, most of the studies were implemented in Sub-Saharan Africa and Latin America and the Caribbean.

Figure 6: Map of IEs by country
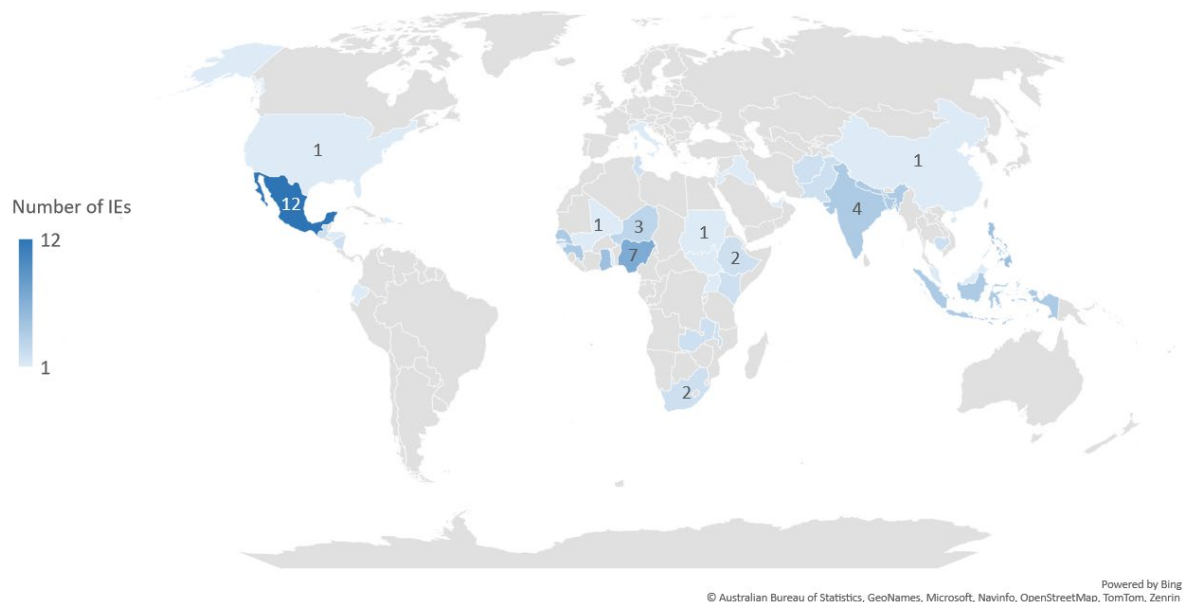
Note: The total of the values displayed will be larger than the number of IEs identified, reflecting that a study may evaluate interventions in more than one country.

Figure 7: Stock of IEs by region over time, cumulative numbers

5.3 Synopsis of research design methods and reporting

Most of the studies we found used randomized controlled trial designs (n = 62; Figure 8). In Figure 9, we present the distribution of research designs across each intervention category. The intervention categories that most frequently used experimental evaluation strategies include the following:

- Cash transfers within the human-capital strengthening intervention category (e.g., Angelucci 2004, 2013; Barham, Macours, and Maluccio 2018; Gazeaud et al. 2022a);
- Vocational trainings and other active labor market policies (e.g., Ahn et al. 2020; Hardy et al. 2019; Das 2017); and
- Information campaigns on the risks of migrating irregularly and other risks (e.g., Beam, McKenzie, and Yang 2016; Tjaden and Dunsch 2021; Bah et al. 2023).

Most of the studies used randomized controlled trial evaluation strategies. However, human capital-strengthening interventions often relied on quasi-experimental approaches, including statistical matching and fixed effects approaches, such as difference-in-difference.

Human capital-strengthening interventions were often evaluated using fixed-effects methods including difference-in-difference, or statistical matching approaches (e.g., Tirado-Alcaraz 2014; Mahé 2017; Bechara Bitar 2019; Araujo and Macours 2021).

Difficult-to-randomize interventions were often evaluated using quasi-experimental methods. These include:

- Three studies from the legal pathways category, which used fixed effects methods (Dalla Pellegrina, Saraceno, and Suardi 2018; Freier and Holloway 2019; Abarcar and Theoharides 2021);
- Three of the multicomponent resilience interventions, which used statistical

matching (Oxfam 2013; Scantlan Petryniak, and Tamang 2018; Fuller and Lain 2018);

- Four studies that used an instrumental variable identification strategy, including a study on vocational training (Hamory et al. 2016), a resilience intervention that provided post-shock financial support and extension services to farmers (Diagne and Cabral 2017), a bilateral labor agreement for legal migration pathways in the Philippines (O'Steen 2021), and a social pension intervention (Posel, Fairburn, and Lund 2006);
- Two studies that used a regression discontinuity design to evaluate the effects of an old-age pension given to enhance the ability of young men in rural areas to seek better work opportunities elsewhere (Ardington et al. 2016) and the effects of the Fund for Natural Disasters established in Mexico in 1996 (Shapiro 2009); and
- One study that applied synthetic controls to evaluate a decent work policy in Ghana—the Additional Duty Hours Allowance scheme (Okeke 2013).

A few IEs (n = 15) used mixed-methods approaches. Examples include vocational training programs (Cho et al. 2013; Duthie et al. 2018a and 2018b), cash transfer programs (Fenn et al. 2015; Sibson 2020), legal pathways interventions (Freier and Holloway 2019), and information campaigns (Ahn et al. 2020; Obi 2018; Bah et al. 2023).

Figure 8: Evaluation design of included studies

- Experimental methods
- Quasi-experimental methods
- Systematic reviews
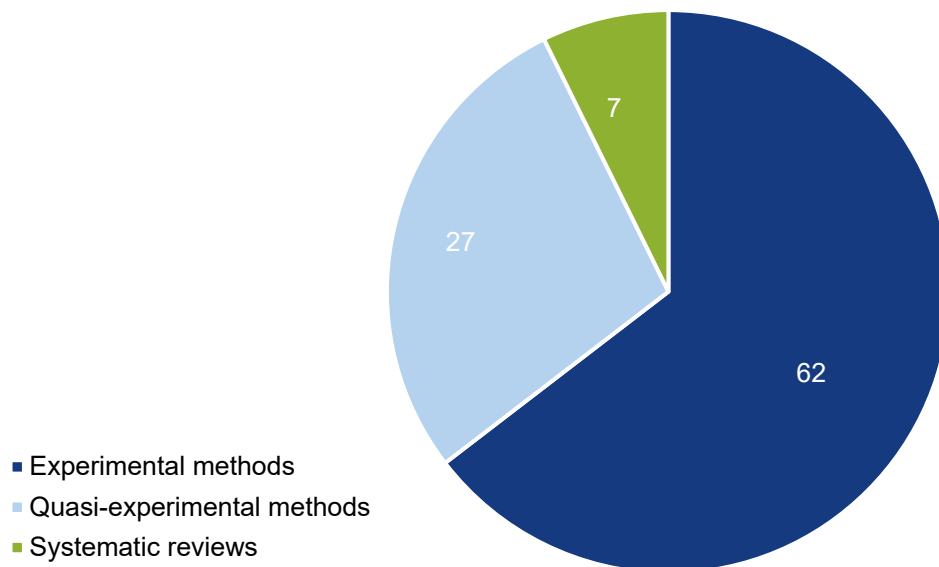
Note: The numbers in this figure refer to individual studies.

One third of included IEs (n = 28) reported obtaining ethics approval for their study. However, this may represent a reporting gap instead of a true ethics gap.

Finally, 12 studies included cost-benefit analysis (Aker et al. 2011; Okeke 2013; Diagne and Cabral 2017; Aker and Kelsey 2022; Gazeaud et al. 2022a) or cost-effectiveness analysis (Fenn et al. 2015). Cost analysis facilitates important policy and programmatic responses, especially when considering how best to assist populations under resource constraints.

Figure 9: Evaluation methods of completed IEs by intervention categories
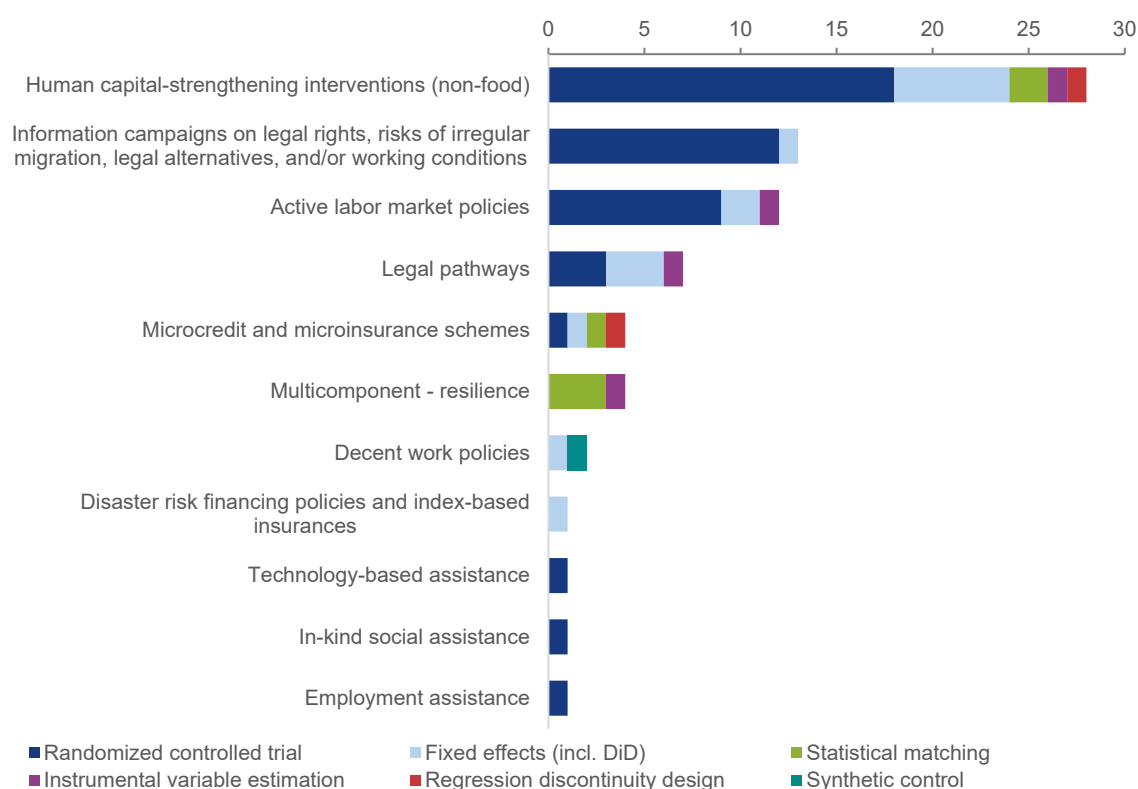
Note: DiD = difference-in-difference. The total of the values displayed will be larger than the number of completed IEs identified, reflecting a study that may evaluate multiple interventions separately.

## Equity-sensitive research and analytical methods are not yet incorporated in the field

Equity-sensitive approaches might help to mitigate potential harm to vulnerable populations who participate in the program and research. A common way to consider equity in the included studies is to conduct subgroup analyses to understand whether programs impact participants differently (n = 20; Figure 10).

Although there is great need for subgroup analysis, these estimates are likely to be biased without addressing multiple hypothesis testing, pre-specifying subgroups, and incorporating these parameters into power calculations and sampling strategies. The result is that much of this analysis should be viewed as, at best, exploratory.

While most included studies evaluated interventions that targeted vulnerable populations,[6] only five studies utilized an equity-sensitive analytical framework or methodology. For example, Bastagli and colleagues (2016) suggested that the treatment effects of a cash transfer program varied depending on the gender of the main beneficiary. Additionally, more research could conduct analyses of subgroups based on vulnerability, socioeconomic factors (e.g., income, poverty, dependency ratios), ethnic groups and so on to unpack dimensions of the capability-aspirations framework.

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[6] We indicate "most" instead of "all" because Antwi and Phillips' (2012) study targets health workers who would not be considered a vulnerable population due to their higher levels of education, income, and employment opportunities.

Figure 10: Distribution of studies by whether they address gender and equity
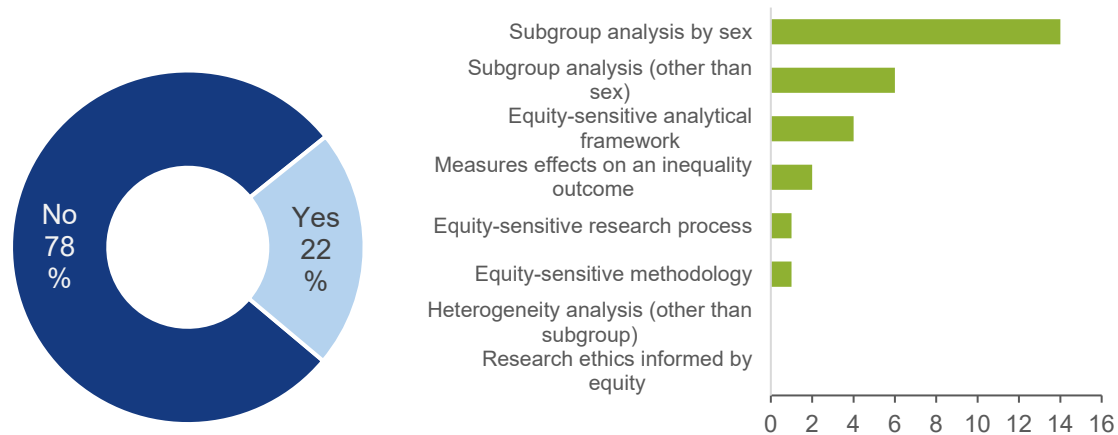
6. Results of the critical appraisal of SRs

All seven included reviews were rated as "low confidence" due to methodological and/or reporting gaps.

We included a total of seven reviews in the EGM, all of which were assessed as having a low level of confidence in the results because of limitations or gaps in methods for conducting comprehensive search strategies, systematic screening methods, risk of bias assessments, and/or reporting on methods utilized (see the critical appraisal criteria attached in Appendix H).

None of the reviews reported conducting risk of bias assessments of included studies. This is an important limitation, as estimates and results obtained from studies may be biased or have poor internal validity, thus biasing meta-analysis findings. Furthermore, without transparency on potential methodological limitations, readers are unable to gauge for themselves the quality of the evidence base underlying the review's conclusions.

In most of the reviews (Sherr et al. 2009; Bastagli et al. 2016; Kabeer and Waddington 2015; Adhikari and Gentilini 2018; Hagen-Zanker and Himmelstine 2013), we identified limitations in screening procedures, such as lack of independent and duplicate screening processes for full-text papers. In some cases, this may represent a reporting gap, but we were unable to confirm this.

Other issues are related to the lack of comprehensive search methodologies (e.g., not using multiple search engines or databases), which might have resulted in missing some relevant studies (Sherr et al. 2009; Hagen-Zanker and Himmelstine 2013), and reporting gaps in the outcomes and findings of the included studies to ensure transparency (Bastagli et al. 2019).

We do not summarize the results of the included SRs because of the limitations of low-confidence reviews, as noted above. In addition, we identified several other reviews that we were unable to include, as they did not meet conventional SR criteria or were not SRs of effectiveness studies. These reviews offer valuable information about the general state of the evidence base relevant to irregular migration, but stopped short of answering questions that align with the research aims of this EGM report. This includes Tjaden, Morgenstern, and Laczko's (2018) synthesis of 30 studies on information campaigns,

which offers a valuable perspective on the state of the broader descriptive and non-causal evidence base.

Another study by Rose and colleagues (2021) represents one of the most detailed reviews of salient root cause and driver issues in Central America. We could not include this review due to lack of comprehensive search strategies and corresponding reporting gaps. Nonetheless, this review offers important policy perspectives that overlap with our own. We encourage researchers to generate direly needed evidence on this topic so that synthesis gaps may be addressed. This is discussed in the following implication sections.

7. Who is funding and implementing IEs and SRs of interventions addressing root causes and drivers of irregular migration?

We extracted data on program implementers and funding organizations (both programmatic and research) and categorized them according to the typology presented in Table 4. For the category "international aid agencies," we refer to public and private agencies providing bilateral or multilateral development aid. Examples include the UK Foreign, Commonwealth & Development office, UNICEF, or the US Agency for International Development. Government agencies were defined by those who supported domestic programs (see Appendix G for agency type definitions).

A large proportion of programs were implemented, or funded, by government agencies (41% and 21%, respectively). This is due to a disproportionately high number of studies evaluating the Mexican government's PROGRESA program. We were unable to identify the implementing agencies for 23% of our studies, and for 44% we were not able to identify the funding agencies since it was not reported by the authors. These reporting gaps are significant, as they affect readers' ability to understand the degree of independence between evaluators and implementers or their funders.

In terms of research, we were unable to confirm funding resources in most instances (34% for IEs and 40% for SRs). Where we could identify them, the share of IEs was similar across international aid agencies, government agencies, non-profit organizations, and academic institutions. Overall, international aid agencies (the UK Foreign, Commonwealth & Development Office) and international financial institutions (World Bank and Inter-American Development Bank) were the largest supporters.

However, these findings are caveated, as most IEs were not intended to examine migration as the primary outcome and/or did not evaluate programs that were specifically focused on addressing migration-related issues.

Table 4: Number of studies by implementing and funding agency types

	Program implementation				Research funding			
	Implementing agency		Funding agency		IE		SR	
Government agency	39	(41%)	19	(21%)	11	(10%)	1	(10%)
Non-profit organization	20	(21%)	3	(3%)	12	(11%)	0	(0%)
International aid agency	7	(7%)	14	(15%)	18	(17%)	3	(30%)
For-profit firm	4	(4%)	1	(1%)	0	(0%)	0	(0%)
International financial institution	1	(1%)	6	(7%)	13	(12%)	0	(0%)
Academic institution	2	(2%)	3	(3%)	12	(11%)	1	(10%)
Charitable or private foundation	0	(0%)	5	(5%)	6	(6%)	1	(10%)
Not specified	22	(23%)	40	(44%)	37	(34%)	4	(40%)

Note: The numbers in the columns refer to studies. In instances where the total of the values exceeds the number of studies identified, this indicates multiple implementing and/or funding agencies involved in the program and/or research.

Table 5: Top three most reported implementing agencies and funders

	Program implementation		Research funding	
	Implementing agency	Funding agency	IE	SR
1	Government of Mexico (12)	World Bank (8)	FCDO (11)	FCDO (3)
2	IOM (4)	Ghanaian government (4)	World Bank (9)	JPAL (1)
3	Concern Worldwide (3)	Mexican government (3)	IDB (4)	George and Obie Shultz Fund (1)

Note: JPAL = Abdul Latif Jameel Poverty Action Lab; FCDO (formerly DFID) = Foreign, Commonwealth & Development Office; IDB = Inter-American Development Bank; IOM = International Organization for Migration.
Where more than one agency is reported by studies, multi-coding is permitted (i.e., a study may include more than one listed funder).

8. Conclusions and limitations

After conducting our systematic search and screening strategy, we included 96 relevant studies, of which 89 are IEs and seven are SRs. There is sparse evidence across root cause and driver interventions—representing a significant opportunity for actors in this sector to generate new, solid, and rigorous evidence and insight into this under-examined issue.

Most evidence is concentrated around a few intervention categories, in particular human capital strengthening interventions (n = 41), information campaigns (n = 21), and active labor market policies (n = 16). Additionally, most studies that measure migration outcomes lack specificity as to whether the migration is internal or international and whether through formal or irregular channels.

Therefore, it is impossible for us to draw conclusions about the extent and characteristics of the effectiveness evidence base on irregular migration programming. This also makes it challenging to understand whether salient policy initiatives are improving conditions in countries and alleviating the need for irregular migration.

The evidence gaps in IEs may reflect difficulties in surveying mobile populations. However, the existing evidence base illustrates that it is possible, as efforts to evaluate programs in this sector have been increasing. The limitations in the primary (IE) evidence base have downstream implications for the quantity of evidence synthesis studies. Our low confidence in the conclusions of existing SRs represents an additional limitation of the synthesis evidence base. However, synthesis efforts are indeed possible in several areas with evidence clusters (e.g., information campaigns, cash transfers, and all the intersections of interventions/outcomes for which we have found a low-confidence review).

These important synthesis gaps highlight an urgent need to commission reviews that follow conventionally accepted methodological standards and transparent reporting standards (see Appendix H for the critical appraisal tool utilized) (Borenstein et al. 2009; Higgins et al. 2019). We encourage policymakers to use the existing evidence with caution, and for funders and researchers to address the most urgent evidence gaps highlighted by this map in a coordinated and strategic manner.

While this study represents a comprehensive mapping of the effectiveness evidence base on interventions that address irregular migration, our EGM has some limitations. First, we focused on a select number of root causes and drivers out of practicality. There were certainly many more interventions we could have examined—for example, those focusing on addressing corruption or improving human rights.

Additionally, as with any review of the literature, there is always a risk of missing relevant evidence, especially for a new and emerging evidence base. However, we took several rigorous steps to mitigate this potential risk, including running detailed search strategies in numerous databases, searching for gray literature in 50 different organizational websites, implementing forward and backward citation tracking, and putting out calls for unpublished studies.

8.1 Implications for policymakers

This EGM can be consulted for the programs of interest to determine whether there are extant rigorous IEs available or under consideration. However, given the lack of high- and medium-confidence SRs, we are unable to provide evidence on program effectiveness or explore implications discussed in existing synthesis studies. If decisionmakers consult low-confidence reviews as assessed by our criteria, they should do so with caution as the results may be biased, and the conclusions may not be valid or reliable.

Policymakers may consider the following:
- Commission IEs when implementing programs for which there is no primary evidence in the EGM. Focus on evaluating interventions that specifically target prospective migrants or populations where irregular migration risk may be high.
- Commission SRs before making programming decisions regarding interventions for which there is a cluster of IEs.
- Consult the findings of IEs relevant to their interests, while remembering that generalizable conclusions on the effectiveness of a program cannot come from single studies, and vote counting should be avoided. In addition, findings from single studies might not be replicable across contexts due to potentially limited external validity.

Table 6: Suggested areas of research by gap type

Gap type	Suggested area of research
Interventions where no or few IEs were found	• Interventions belonging to the domains relating to "building safe communities through violence prevention and intervention" and "strengthening resilience against shocks and stressors" • More evidence explicitly focused on migration programming or migration as the primary research question, across all intervention domains
Outcomes where no or few IEs were found	• Measures of irregular migration • Measures of international migration
Synthesis	• All interventions/outcomes for which there is a cluster of studies (e.g., information campaign on the risk of migrating irregularly, on the intention to migrate)

8.2 Implications for future research and summary of evidence gaps

Overall, the evidence looking at irregular migration outcomes is limited; however, this EGM highlights a growing evidence landscape on migration in general, which can be consulted when considering how to design, implement and analyze interventions and programs. We have identified numerous primary evidence gaps and synthesis gaps; based on these findings, we suggest that when commissioning and designing new programs, researchers and funding agencies should consider:

- Prioritizing evaluation of interventions that are focused primarily on addressing irregular migration and risks, migration-specific issues, and migrant populations.
- Prioritizing primary research gaps in intervention categories and subcategories where no IEs currently exist, for example:
  - The domain of the seven interventions categories that aim to build safe societies and reduce violence;
  - The domain of interventions to strengthen resilience against shocks and stressors (early warning systems, natural resource management, infrastructure (re)construction and maintenance, food and nutrition interventions, local coordination mechanisms in support of service provision, services communication and advocacy);
  - Interventions that provide access to credit; and
  - Interventions to improve decent working conditions.
- Focusing on interventions in areas where evidence is scant but promising, or interventions that address the most pressing issues.
- Using more detailed measures of migration which elucidate clearly whether the migration measurement was internal or international—and, if international, whether it was through formal or irregular channels.
- Using alternative methods to randomized controlled trials to create counterfactuals in contexts where RCTs are not feasible. Examples include, for example, instrumental variables, regression discontinuity design and synthetic controls.
- Using mixed-methods approaches which collect and analyze qualitative and quantitative data, thereby helping to elucidate the "black box" of implementation and the mechanisms that achieve or fail to achieve impact.
- Clearly reporting any unintended consequence of the evaluated programs.
- Incorporating cost evidence, such as cost-benefit analysis or cost-effectiveness

data, which provides useful information to funders, particularly in the context of resource constraints.

- Ensuring studies are sensitive to the needs of vulnerable populations by complying with the universal ethical standards of respect for persons, beneficence, and justice. This includes receiving and reporting ethical approvals by relevant ethical review boards (e.g., institutional review boards), adopting gender and equity approaches in the research process to mitigate social norms that might reinforce inequities, and ensuring that data are collected in ways that allow people (especially women) to feel comfortable speaking openly.
- Filling synthesis gaps through the production of high-confidence reviews in areas where sufficient evaluative evidence exists (e.g., active labor market policies, information campaigns).
- Commissioning living synthesis projects so that this EGM and any subsequent synthesis efforts are continually updated with new studies, ensuring that decision-makers have access to the most up to date evidence.

Online appendixes

Online appendix A: Technical methods

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-A.pdf

Online appendix B: Search strategy

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-B.pdf

Online appendix C: Data extraction template

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-C.pdf

Online appendix D: Screening codes

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-D.pdf

Online appendix E: List of shocks and stressors required for interventions included in the strengthening resilience against shocks and stressors domain

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-E.pdf

Online appendix F: World Bank classification of countries

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-F.pdf

Online appendix G: Agency taxonomies

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-G.pdf

Online appendix H: Critical appraisal tool

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-H.pdf

Online appendix I: EGM advisory group

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-I.pdf

Online appendix J: Examples of records excluded from this EGM by exclusion criterion

https://3ieimpact.org/sites/default/files/2023-10/IOM-EGM-Report-Online-appendix-J.pdf

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In 2022, an estimated 281 million people were international migrants or residing outside of their country of usual residence. Migration serves important development purposes and is an internationally recognized human right. But with limited legal pathways of migration journey, individuals are likely to transit outside of the laws and regulations of countries. To understand the effectiveness of interventions that address the root causes and other drivers of irregular migration, the International Organization for Migration (IOM), through a USAID project in Guatemala, commissioned 3ie to produce an evidence gap map.

Evidence Gap Map Report Series

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