The migration-sustainability paradox: Transformations in mobile worlds

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Abstract

Migration represents a major transformation of the lives of those undertaking movement and has been transformative of societies and economies globally. Current urbanisation and economic globalisation processes are both intertwined with major movements of populations at various scales and are driving loss of ecosystem services and unsustainable resource use. This represents a migration-sustainability paradox: migration is a driver of unsustainability as part of economic globalisation, while simultaneously representing a transformative phenomenon and potential force for sustainable development. This apparent paradox can be explained by current models of sustainability transformations not effectively incorporating the movement of populations or concluding whether and how mobility represents an opportunity for equitable and sustainable development, or a divergence from sustainability trajectories. We detail the dimensions of the transformative potential of migration and develop a generic framework for migration-sustainability linkages based on environmental, social, and economic dimensions of sustainability, highlighting identity and social transformation dimensions of migration.

Keywords: migration and mobility, sustainability, transformations, conceptual framework.

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Highlights

- Migration and sustainability raise a paradox of migration simultaneously contributing to unsustainability while being a process of social and individual transformation.

- Current theories and models of transformation fail to incorporate mobility and migration dynamics.

- Migration affects sustainability in environmental, social, and economic dimensions through processes of community, place, and human capital.

- If policies and strategies for sustainable development incorporate migration, they are likely to yield significant synergistic benefits.

1. Introduction

Theories of transformation explain how societies can shift away from current trajectories of unsustainability. Most accounts of transformation include common elements: the limitations of governance; missing institutions; dominant economic structures; and social norms and identities [1-4]. The mobility and movement of capital, along with overexploitation of finite natural resources, is described as one of the principal drivers of unsustainability [5]. Contemporary globalisation is implicated in rising economic inequalities, but also political instability, conflict, environmental degradation, and climate change. Thus, the discourse on contemporary globalisation is marked by an emphasis on the unregulated flow of capital, commodities and goods, and on the impact of free trade on sustainability [6-8]. In parallel, world systems models highlight that the disruptions and dislocations inherent to the development of capitalism are the principal factors underpinning migration processes [9]. Trajectories of development interact with population movements: different forms of mobility in response to global inequality hold the promise of increased wellbeing, income and socioeconomic opportunities in both international and domestic destination areas [10; 11].

Despite these competing meta-theories, migration and sustainable development are rarely uttered in the same sentence. We suggest that there is a migration-sustainability paradox: the simultaneous role of migration as part of economic globalisation while at the same time being a potential force for transformative social and environmental change. In other words, spatial mobility, including the movement of labour, may be both a symptom of the unsustainability crisis and at the same time a key element of the transformation to socioeconomic and environmental features of sustainability. Such a paradox can be explained and investigated through hypotheses and data at multiple spatial and temporal scales [12]. One of the limitations of current models and concepts of transformation to sustainability is that they fail to systematically account for demographic shifts, notably migration and mobility. On the contrary, migration transition theories conceptualise migration as an intrinsic part of broader social transformations processes [13]. Hence, we argue that theories of transformation to sustainability will better explain current trajectories and potential leverage points if they incorporate contemporary dynamics and challenges and opportunities of migration and associated demographic shifts.

Migration, both internal and international, is transformative of the lives of those engaged in it and of the economies and societies that are, simultaneously, source and destination of migration flows [14]. Migration is intertwined with societal, technological, demographic, and ecological transformations, including processes of colonialism, over timescales of centuries [15]. In this sense, there are long shared histories of colonial and post-colonial movements between regions of the world. Contemporary realities and political contestation results from further transitions as populations in low-fertility destination areas across the world are gradually being replaced by both internal and international immigrants [16].

Under which conditions does migration represent a transformation to sustainability? We hypothesise that transformations towards sustainability are facilitated by migration if it *simultaneously* improves the three dimensions of sustainability: a) migration increases aggregate wellbeing while lowering environmental burdens; b) it reduces inequality in multiple spatial, economic, and health dimensions; and c) it represents or promotes diversity, political freedom and reduced insecurity.

Migration underpins the efficient functioning of the global economy and is an integral dimension of livelihood diversification strategies [17; 18]. Furthermore, mobility is a key response mechanism to a range of external stressors, and is widely regarded as being integral to development [14; 19; 20]. At the individual level, migration is also instrumental in mediating life course transitions, such as household formation and upskilling, thus enabling individuals and families to achieve their goals and aspirations [21].

The prevalent forms of migration involve international and internal movements. Between 1995 and 2017, the percentage of international migrants has remained stable, oscillating between 2.7 and 3.3 percent of the global population [22]. Estimates of the number of internal migrants are inconclusive because domestic movement of people is measured in many different ways using various instruments and techniques [23]. The global stock of internal migrants in 2005, that is the number of migrants living outside their region of birth, was approximately 760 million people [24], around 12 percent of the global population. Thus, migration is a ubiquitous process that takes place at different rates at domestic and international levels. Figure 1 demonstrates that there is significant diversity, even between large population countries, with the US near the top ranked countries on internal migration rates, and India close to the bottom. Between 2005 and 2010, nearly 20 percent of the population in the US had moved internally, whereas the net international migration rate is 16 people per 1000 inhabitants. In contrast, Spain has an internal migration intensity of only 3 percent, but a net international migration rate of 48 per 1000 inhabitants. Migration can be permanent, which entails a change in usual locality of residence, or temporary involving moves of varied duration including seasonal and circular mobility [25].

Figure 1 here

An emerging science on migration-environment interactions has demonstrated how migration as a global social process is affected by environmental challenges and how migration alters patterns of vulnerability and adaptation [26-29]. For example, although most migration is domestic, significant numbers of people are also displaced through conflict and from natural hazards, some crossing international borders [30]. Migration and urbanisation processes are intensifying globally, and particularly in low- and middle-income countries, because movement towards economic opportunities increases life chances and potential wellbeing [31]. Understanding the transformative potential of migration requires incorporation of all major migration trends and future transformations.

Social transformations are closely linked to major shifts in dominant economic, political, and strategic relationships [32]. On a macro scale, they represent complexity, interconnectedness, variability, context, and multi-level mediations of change. Migrants have been recognised as agents of social transformation because they bring a discrete set of cultural behaviours that facilitate a step-change in which existing socioeconomic patterns are questioned and many are reconfigured [13]. Multicultural settings, therefore, has implications on consumption behaviour, ecological footprint or political representation as elements of economic, social, and environmental sustainability.

We conceptualise transformation processes to account systematically for the migration-sustainability interactions by incorporating migration transition dynamics. We build on theories of migration as social transformation [13] and migration as development [33]. Diverse aspects of sustainability as encapsulated in the United Nations Sustainable Development Goals (SDGs) require insights into the role of population movements [34; 35]. These include global trends, such as the impact of growing diversity on society in destination regions and countries. The conceptual framework also builds on

insights from development accounting on the determinants of material wellbeing across countries [36-39]. Specifically, we examine how migration influences income at individual and macro levels [33] and relationships to poverty and inequality [40], as well as environmental burdens, such as carbon emissions, material footprint, and adaptive capacity [29; 41].

2. Mechanisms and processes linking sustainability and migration

Demographic transformations are highly diversified across countries. In essence, established demographic transition theories show how societies progress from regimes of high fertility and high mortality to a post-growth state in which both fertility and mortality rates are low [42]. The three principal components of population change are fertility, mortality and migration, and the socio-economic, cultural, institutional and political contexts of countries reflect different stages of transition [43-45]. Transition theory explains how demographic structures across the world, evolve and alter their configuration through ageing populations, changing household composition, and migration [46]. This diversity in the composition of the population residing in a given country can yield to a process of social transformation. In turn, as countries move through the different phases of their mobility transitions, certain migration patterns become more prominent ranging from urban to rural moves to diversify livelihoods through to transnational and trans-local lifestyles [47-49].

Migration impacts on source and destination areas in a variety of ways depending upon the size, composition and nature of migration flows, as well as the specific context from which migrants are drawn, and the timing of their migration. The interaction between migrants from different socio-cultural backgrounds and the places where they move to inevitably results in different levels of engagement with the environment, consumption behaviour, urban equipment, and other socioeconomic mechanisms and processes underlying sustainability. As a result, mobility is a key element driving sustainable outcomes [8; 50]. The relationship between migration and development is inevitably highly contested, based on different analytical tools, conceptual frameworks, and political stances [51]. Development studies and economic analysis converge in their findings that migration has, on aggregate, significant benefits at the individual level [10; 52]. Yet, migration brings about a complex set of demographic, socioeconomic, and environmental challenges including labour market impacts, brain drain, brain gain, resource demand, and the effects of remittances [53-55]. Figure 2 summarises these social, economic, and environmental implications of migration for sustainability.

Figure 2 here

Links between migration and sustainability outcomes in source and destination areas through remittances are well-established [10; 56-58]. Migration is also linked to upward social mobility at destination [59-61]. Previous research suggests that emigration reduces labour supply overall and, more specifically, the supply of particular categories of emigrating workers [54]. As a result, if the unemployed are more likely to migrate, then migration may diminish unemployment pressures and demand for social security programmes in source areas [62; 63].

There is also well-established evidence that migration changes family composition and child outcomes, in terms of health and education [64; 65], and has complex effects on social cohesion, integration, adaptation, cultural identity, and gender relations [66-69]. Research on migration and natural resources has shown that population movements impact on the resilience of individuals and communities, as well as on the sustainability of the underlying resource base [70; 71]. Population

pressure, including impacts derived from migration, bring about a range of consequences for agricultural land and natural resources. On the one hand, population size and growth rates influence resource availability and demand. On the other hand, migration changes the distribution of residents in an area, with direct consequences on population density and land use [72-74].

New population movements have implications for social, economic, and environmental aspects dimensions of sustainability. Previous studies theorise migration-sustainability interactions from a biophysical, ecological and behavioural perspective, cultural and sociolinguistic, or policy and development perspectives [8; 75]. The pathways through which migration may affect sustainability, as discussed above, are summarised in Figure 3. Like all models, this is a simplified version of reality. Nonetheless, it captures the economic, social, and environmental dimensions of sustainability derived from the literature. The model is scale neutral: the relationships hold, we suggest, for individuals and households as well as for economies and societies as the unit of analysis. Addressing the relationship for countries, for example, using established indicators would illuminate how migration could contribute to achievement of the SDGs.

Figure 3 here

Economic development in Figure 3 is represented by the level of income per capita, the total activity of the national economy [76]. Social domains of sustainability are represented by measures of social cohesion as a source of political stability, security, and wealth. Solidarity and social cohesion are central to sustainability, and from an economic perspective, social division is costly in terms of increased public expenditure [77]. Levels of poverty and inequality are included as measures of social exclusion. Environmental elements from the SDG framework include carbon emissions and aggregate material footprint [78]. In order to account for the adaptive capacity to climate-related hazards, we also include number of directly affected persons attributed to disasters per 100,000 population [79].

The relationship between migration and sustainability is mediated by changes in the stocks of physical capital, human capital, and labour. Specifically, migration may affect physical and human capital and labour (grey arrows in Figure 3). First, a permanent increase in migration flows may have a negative impact on income per capita due to physical capital dilution – i.e. the fact that the amount of capital must be spread more thinly over the population due to high population growth [36]. Second, migration may affect stocks of human capital depending on the selectivity of migrants in relation to their level of education [80]. Third, the impact of migration on the labour force is less conclusive and it depends on the selectivity of migrants with respect to their demographic structure [81], as well as on the degree of substitutability between migrants and natives [82], among other factors. These three forces, in turn, influence income per capita, represented in economic models through a standard aggregate production function [33; 83], as shown by the orange arrows.

Changes in economic activity are central to social and environmental dimensions of sustainability (see blue arrows in Figure 3). In particular, changes in income per capita may affect the levels of poverty [84; 85] and inequality [40], depending on structural factors in economies. Levels of income have direct effects on the levels of material footprint and carbon emissions [29; 86]. The extent of the environmental burdens are compounded by the levels of poverty and inequality (red arrows in Figure 3) or cumulative adversity [87]. It is also likely that material footprint affects the level of carbon emissions, which is expressed in the framework through the inclusion of the green arrow shown in Figure 3. Finally, income may also affect the adaptive capacity of communities since both income and poverty explain differentials in responses before, during, and after disasters [88]. In addition, we posit that

human capital may also affect directly adaptive capacity since education is found to reduce disaster-related mortality [41].

In effect, the model presented in Figure 3 shows that migration moves measures of sustainability in the right direction, but under specific circumstances. Migration is an intrinsic part of broader development processes, and 'represents a vital resource rather than a desperate response' [31]. Hence, it increases aggregate wellbeing, although this only represents a sustainability transition if it lowers environmental burdens: such burdens are spatially uneven and structural. Cities, as migration destinations, are in effect the crucibles of the sustainability challenges [89]. Further, transitions are only sustained if they reduce inequality in multiple spatial, economic, and health dimensions, and if they reduce insecurity at individual levels.

3. Political economy of migration-sustainability interactions

Transformations to sustainability are a matter of political economy: vested interests, entrenched ideas, and cultural framing. These are apparent in the migration-sustainability paradox where migration policies largely frame migration as a problem to be managed, and migrants as a labour resource. Migrants become scapegoats in times of economic downturn, for driving down wages, placing demand on public services, and reducing social cohesion [90]. Transformative change therefore requires, paraphrasing Scoones et al. [3] , societies to build on diverse knowledges, to recognise mobility as a resource and pathway to sustainability, and to engage with the inherently political nature of both sustainability and mobility. The onus for transformations should not, therefore, be the responsibility of vulnerable groups [2], but should capitalise on the ability of migrants to participate on transformations to sustainability.

Migrant populations bring with them diverse knowledge, perspectives, and experiences of sustainability, yet their voices are often excluded from discussions and formal planning processes for sustainability [91]. There is growing evidence that when diverse perspectives are integrated into inclusive knowledge systems, the result is inclusive and transformative action [3]. Thus, migrant social networks in the communities of origin and destination alter the consequences of migration management policies [92]. The restrictiveness of entry and integration policies directly affect the capabilities of migrants as individuals in contributing to sustainability transitions [10; 93; 94]. These capabilities are also known as migration infrastructure, that is, the "systematic interlinked technologies, institutions and actors that facilitate mobility" [95].

Given there are multiple potential pathways to sustainability, the conceptual model presented here has diverse outcomes in terms of social, environmental, and economic dimensions, that are context- and historically-specific. Migration flows are necessarily heterogenous: predictive models of aggregate flows, for example, show that more migrants are moving from high to low climate vulnerability regions [96], yet climate risks are also trapping the most vulnerable populations in hazardous places [97; 98]. Migration flows and shifting migration dynamics will have an impact on the landscape of sustainability, and the choice of sustainable development pathways will certainly have an impact on migration.

As mentioned above, the relationship between migration and sustainability is a matter of political economy in its economic, social, cultural, and demographic dimensions. Transformations depend on who does them, and where and how they come about. Who will be affected, and where, depends on

whether actors stand to lose or gain from transformations [99-101]. How transformation processes come about depend on actors and their constructions of frames and narratives. These include diverse interpretations of what the problem is, how change comes about, how uncertainty is understood, and belief in incommensurate values [101-103]. Populist framings on migration depict new migrant populations as a threat to existing order, thus, introducing a level of uncertainty or ambiguity into political and security discourses. Such narratives often emphasise the need for strong borders, limited movement, and anti-globalisation perspectives [104]. Climate change advocacy commonly raises migration as a threat to social order and the nation state in destination areas [105], with the securitisation of both climate and migration discourses [106]. Similarly, the COVID-19 pandemic has been framed as an issue of biosecurity [107] putting migration in the spotlight: the COVID-19 virus is perceived as coming from 'somewhere else', brought to each locality by travel and movement of people. For instance, new migrants were considered the 'hidden flaw' in Sweden's lock-down policy, stating that not all ethnic groups had access to expertise[108]. Widespread economic shutdown and travel restrictions highlighted how human mobility initially enabled the spread of the virus globally. It is evident that the public health response affects marginalised populations, including migrant populations, in specific ways of stigma and blame: fear of the virus spreading and of international or local disease transmission.

Asymmetric power is a major barrier to the transformative potential of migration [2; 109]. Immigration and welfare policies, for example, limit the capacity to migrate and access to state-provided welfare, health care, and education. Similarly, regulations on the internal movement of people act as a barrier for social progress. For instance, in China, rural-urban migration of children and the elderly is constrained by their lack of access to basic welfare provisions in cities due to household registration and budget allocation policies [110]. Political participation is also restricted when migrants lack the citizenship of the country of residence to access voting rights. Furthermore, research on conservation and urban planning policy has shown that the lack of recognition also affects migrants with the citizenship of the country of residence. For instance, when their belonging to the place of residence is contested, they are stigmatised or when they experience language barriers [111; 112].

Across horizontal and vertical dimensions of governance, there are major blind spots when it comes to the consideration of migration within sustainability policies and programmes, and, to an even greater extent, the consideration of sustainability dimensions within migration and integration policies and programmes. The Millennium Development Goals, failed to mention migration at all [113]. In this sense, the SDGs represented progress by explicitly referring to various aspects or forms of migration in a limited number of goals and targets [34; 114]. At the same time, the International Organization for Migration has advocated for the design and implementation of sustainable reintegration pathways for returning migrants [115]. International, national, and local governance approaches to integrating mobility and migration into sustainability planning remain, for the most part, siloed along traditional policy domains despite the intrinsic links between them.

4. Conclusions

Emerging research on migration goes beyond the perceived paradox of sustainability to show how individuals transform their lives and life chances every day, often in ways that contribute to the greater good and even to sustainability. Migrating from one place to another is an everyday means of personal transformation. Yet, at the aggregate level, migration is intertwined with globalisation and has been an engine for urbanisation over the past few decades.

We have argued here that common framings of transformation and sustainability are underpinned by standard concepts of migration as a temporary state, measured by flows between and stocks within bordered, sedentary forms of political, economic, and social organisation. Migration is a process for development, but one that is managed through the national state, as reflected in the UN Sustainable Development Goals. Yet, most of people's lives are on a spectrum of mobility: neither wholly mobile nor wholly sedentary, and at times constrained by immobility [116]. Integrative research on mobility and transformation de-emphasises national status in individual movement decisions and focuses on the migratory experience, linkages between places, the potential for innovation, and the contribution of collective action and community resilience.

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Figure 1: Internal Migration Intensities[117] (latest available figures) and Net International Migration Rates[118] (2005-2010). Internal migration measures represent a percentage of the population, whereas Net international migration rates (NIMR) correspond to the difference between emigration rates and immigration rates per 1000 inhabitants. Therefore, a positive NIMR represents a net outflow, whilst a negative one represents a net inflow of people. The selection of countries corresponds to those with recent comparable available data on both internal and international migration.

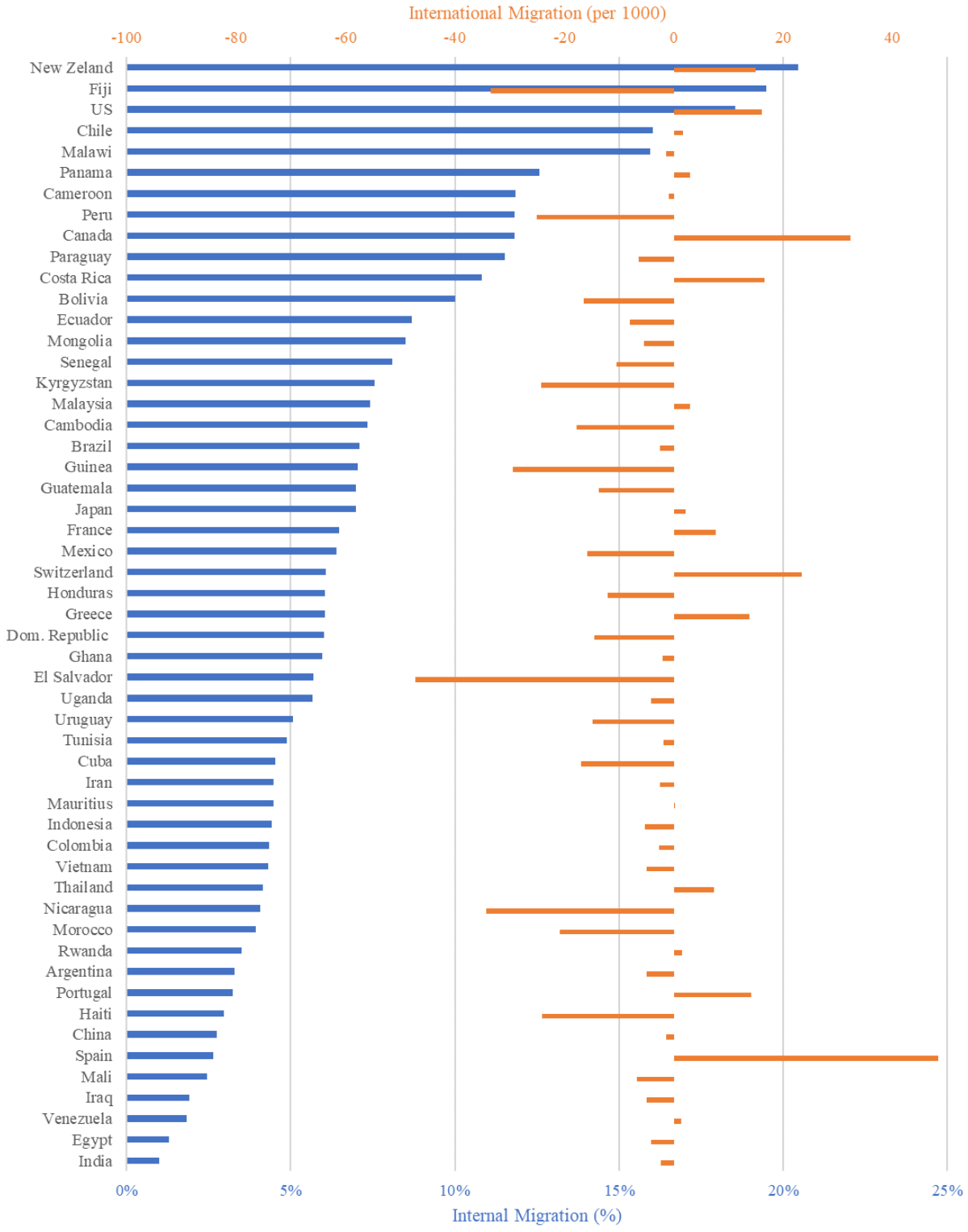


Figure 2: Impacts and challenges of migration flows on economic, social, and environmental dimensions of sustainability in source and destination areas

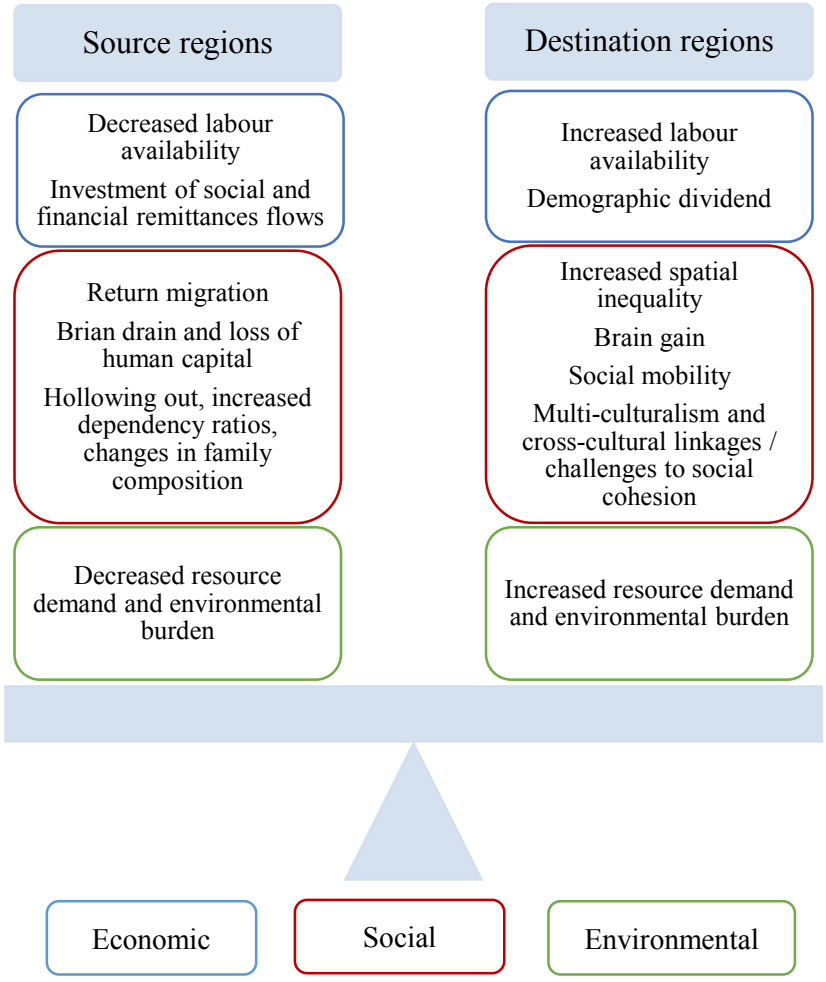
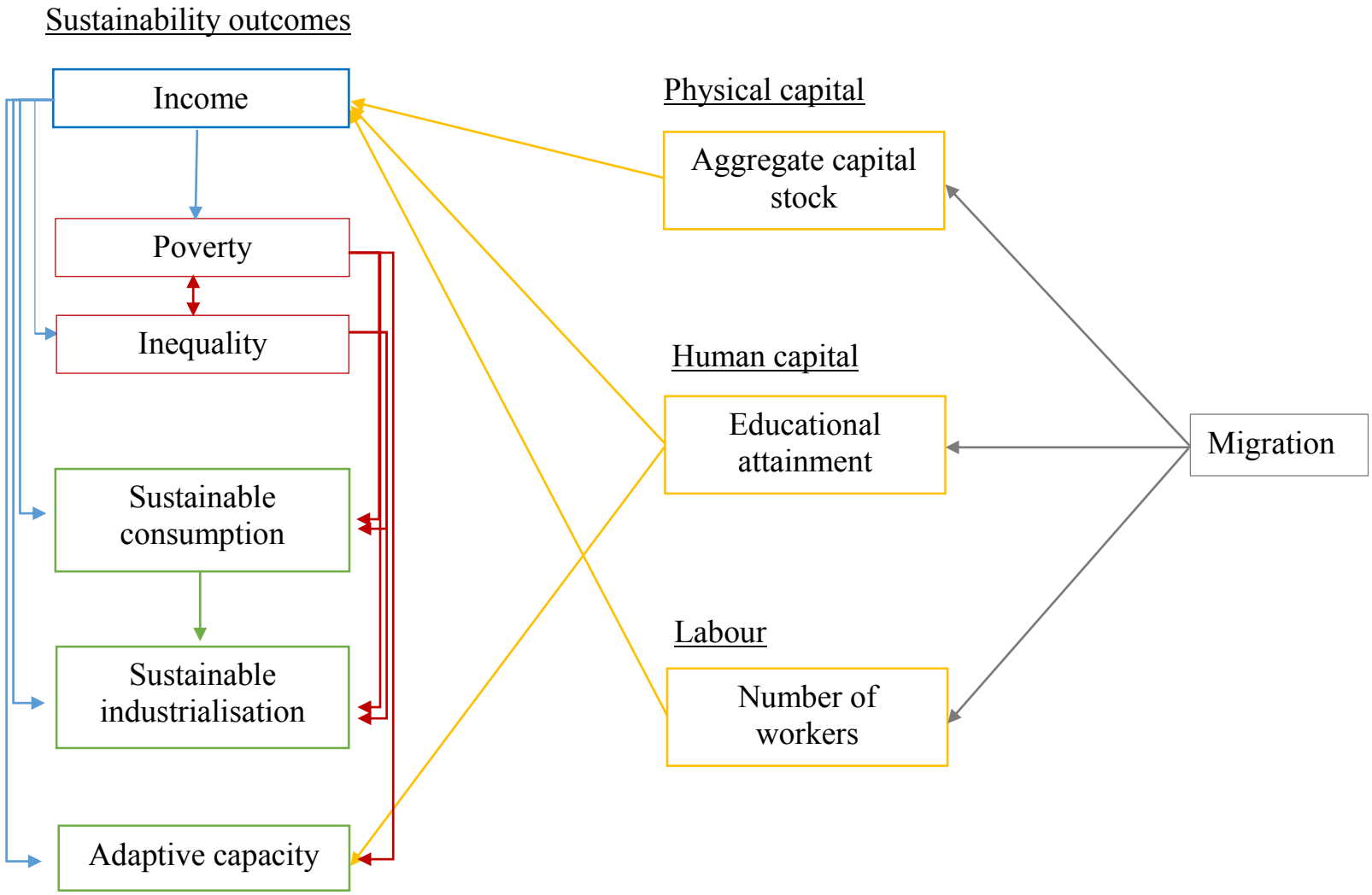


Figure 3: Migration affects environmental, social, and economic dimensions of sustainability through capital and labour pathways.



Declaration of interests

☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☐The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: