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Global migration futures

Exploring the future of international migration with a scenario methodology

Simona Vezzoli, Ayla Bonfiglio and Hein de Haas

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- analyse migration as part of broader global change
- contribute to new theoretical approaches
- advance understanding of the multi-level forces driving migration

Abstract

Preparing for future changes in international migration requires an understanding of the different ways in which societies may change and how these will affect migration patterns. This requires us to move beyond traditional approaches of migration forecasting, which tend to focus on a limited set of relatively certain, easy-to-predict factors, such as demographic trends, and which assume structural continuity, by exploring methodologies that are suited to examine factors such as geopolitical shifts, economic restructuring, technological change and environmental change, which are notoriously difficult to predict, but which we cannot afford to ignore, since they will have a considerable impact on global migration patterns and trends. To this end, this paper presents the Global Migration Futures (GMF) Scenario Methodology developed at the University of Oxford's International Migration Institute (IMI). The GMF Scenario Methodology integrates insights from migration theory with techniques from the Intuitive Logics School of scenario planning to enable the simultaneous and systematic examination of relatively certain and uncertain migration determinants, their future evolution as well as their implications for population mobility. In addition, this paper discusses the key insights gained through the application of the GMF Scenario Methodology in different world regions as well as its main limitations.

Keywords: migration futures, scenarios, scenario methodology, uncertainties, migration research

Author: Simona Vezzoli, University of Amsterdam, S.Vezzoli@uva.nl; Ayla Bonfiglio, UNU-MERIT, bonfiglio@merit.unu.edu; Hein de Haas, University of Amsterdam, h.g.dehaas@uva.nl

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1 Introduction

Concerns and fears about migration and diversity around the globe have created growing interest in understanding why, how and where people migrate. Most migration research focuses on contemporary migration flows or alleged ‘migration crises’. The resulting short-term view coincides with a tendency to neglect the long-term evolution of migration and its key determinants – such as urbanisation, demographic transitions and economic transformations. The dominance of short-term perspectives is also common in the migration policies adopted by many governments, which frequently seem to ignore long-term migration determinants as well as the ways in which future regional and global change may affect long-term migration patterns. The majority of studies on the future of migration assume ‘structural continuity’ and focus on factors that are relatively easy to predict in the short- and medium-term, such as demographic trends; these studies typically ignore migration determinants which are difficult to quantify and are uncertain in terms of their future evolution, such as geopolitical shifts, conflict, economic trends and the concomitant global geography of labour demand (Bauer and Zimmermann, 1999; Bijak, 2006; Bijak et al., 2008; Bijak et al., 2007; Kaczmarczyk and Okolski, 2005; Schmidt and Fertig, 2000). This tendency to exclude factors which are more uncertain from analyses of future migration has impeded the development of comprehensive and, hence, realistic migration scenarios.

To fill this gap, in 2009 the International Migration Institute (IMI) developed the Global Migration Futures (GMF) project with the goal of facilitating research on the future of international migration that goes beyond short- and medium-term forecasts of continuous and relatively certain migration determinants. This paper presents the project’s Global Migration Futures Scenario Methodology (hereafter GMF Scenario Methodology) and argues how it can enhance the way migration futures are studied. It does so by identifying key gaps within existing approaches and subsequently introducing the GMF Scenario Methodology as well as its underlying concepts. The paper then discusses how the GMF project applied the methodology to explore migration futures in Europe and North Africa and concludes by presenting some of the key insights gained through applying the methodology, the data it generated, as well as reflections on the methodology’s limitations.

2 Short-term thinking about migration: public debates and policies

Public debates on international migration often display a number of shortcomings. First, they tend to frame migration in normative terms as a ‘problem to be solved’, a ‘challenge to be managed’ or ‘a threat to be combatted’, rather than to comprehend migration as an intrinsic part of long-term processes of social and economic transformation (Castles et al., 2014; International Migration Institute, 2006). Research on international migration provides evidence that current migration patterns fit into long-term processes of regional and global change which are shaped by factors such as economic growth, labour market transformations, and educational and political shifts. This larger picture is often not considered by analysts and policy makers, who are focused on ‘resolving’ the migration consequences of current events, such as economic crises (e.g. the post-2007 Global Economic Crisis), political crises (e.g. the ‘Arab Spring’) or violent conflict (e.g. the Syrian civil war).

Second, public debates tend to have a weak understanding of migration determinants and a one-sided focus on the impact of migration policies. Empirical evidence suggests that although migration policies often have a significant effect on the targeted flows (e.g. asylum and refugee flows, family migration, low- and high-skilled labour migration, student migration), they fail to assess the relative importance of migration policies in comparison to other migration determinants (Czaika and de Haas,

2013b; Massey, 1999). For instance, demographic transitions and economic transformations in countries such as Brazil, Turkey, China or India are likely to have fundamental repercussions for migration patterns at the regional and global level. If China evolves into a migration destination, this may affect migration to other countries around the world. Hence, focusing too narrowly on migration policies prevents us from considering how profound social and economic transformations – which are beyond the reach of such policies – may affect future migration.

This begs the question: How can we meaningfully understand the future of migration? Conventional approaches rely on projections and forecasts, which tend to project recent trends into the future using linear extrapolation, based on the *ceteris paribus* assumption that future power relations, global economic geographies, geopolitical constellations, and policy regimes will remain stable. In other words, they predict ‘more of the same’, which is highly unrealistic, considering the fundamental and largely unanticipated shifts European migration has witnessed since the 1950s – from being the main source countries to being the main destinations of global migration flows.

The following section will delve more deeply into the migration futures literature, with a particular emphasis on forecasting approaches, and will identify the theoretical and analytical gaps within existing methodological approaches.

3 Studying the future of international migration: critiquing existing approaches

Future political, economic, cultural, technological and environmental changes present a difficulty for policy makers who would like to be prepared for shifting conditions. In the recent past, we have seen the growing role of China in global economic affairs, the rising geopolitical presence of Russia, and surprise political events such as the United Kingdom (UK)’s decision to leave the European Union (EU) and the United States (US)’ election of Donald Trump as president in 2016. A feeling of uncertainty and a scramble to understand the sources of these shifts have grasped our consciousness. Yet, it is customary that the underlying trends that cause such shifts often remain unnoticed until they powerfully defy the *status quo*. These same trends and shifts can have fundamental implications for international migration. This exemplifies the need to broaden our perspectives to detect shifting conditions, and not just when a crisis arises, so that we are better prepared for potential changes in society as well as their migration consequences.

For instance, given the long history of Mexico–US migration, many people believe that this migration corridor will continue *ad infinitum*, despite evidence that since 2008, Mexican migration to the US has decreased. This is not so much the result of border controls, but the result of declining employment opportunities in the US, deportations and risky border crossings as well as declining birth rates and improved economic conditions in Mexico (Passel et al. 2013). Similarly, it is often taken for granted that European and other Western nations will continue to attract growing shares of a quasi-unlimited pool of labour migrants from developing countries. However, such assumptions disregard the rapidly declining fertility levels in ‘labour exporting’ countries (such as Mexico, Morocco and Turkey) as well as the rise of new global migration destinations in Latin America, the Middle East and East Asia, which may well challenge the common (Eurocentric) notion that migrants will move to the West. Growing African migrations to China and South America reveal signs of *possible* important changes in migration patterns in the future (Bodomo and Ma, 2010; Li et al., 2009; Zubrzycki, 2012). These examples illustrate that the future structure and direction of world migration patterns is likely to change.

The desire to be prepared for future change has resulted in the proliferation of forecasts that explore *likely* future migration trends (Bijak, 2006; Dustmann et al., 2003; Fertig and Schimdt, 2000; Giubilaro,

1997; Kaczmarczyk and Okolski, 2005). The resulting estimations are well received by decision makers, for they provide a concrete range of figures, pointing them towards *likely* developments (Börjeson et al., 2006). However, forecasting methods in population and migration studies, as well as other areas such as strategic planning, often produce significant prediction errors (Dustmann et al., 2003; Khan and Lutz, 2007; Lutz and Goldstein, 2004; Schoemaker, 1993). For instance, in a UK Home Office study on the potential migration consequences of the 2004 EU enlargement, which brought into the Union eight new Central and Eastern European countries plus Cyprus and Malta, estimated that net immigration would range between about 5,000 and 13,000 per year (Dustmann et al., 2003). In reality, the net migration figures from the eight Central and Eastern European accession countries alone were 42,000 per year on average between December 2004 and December 2010 (Office for National Statistics, 2011).

Forecasts for international migration encounter a number of difficulties, such as the lack of reliable migration flow statistics and a continued reliance on rudimentary push–pull and neoclassical migration theories, which therefore tend to be based on inaccurate assumptions on the causes of migration (de Haas et al., 2010). Forecasts also have latent assumptions and conceptual limitations, as follows:

- They use data from past migrations to estimate future migrations, which neglects the *historical context* within which migration flows emerged. For instance, if we had projected Italy's 1980s immigration flows using 1960s–1970s data, we would have forecasted continuous high emigration and low immigration. However, important long-term socio-economic changes, such as the end of internal migrations and the growth of the small business sector, contributed to an important transition that transformed Italy from a net emigration to a net immigration country, starting in 1980 (Ceccagno, 2003);
- In the absence of country-specific statistics, forecasts rely on data from other 'similar' countries to predict future migration flows. Lacking data on Eastern European migration to the UK, the Home Office report that forecasted immigration from the 10 new EU accession countries relied on aggregated migration data from nine regions over the 1975–2000 period, which led to vastly underestimated migration outcomes (Dustmann et al., 2003);
- Forecasting models assume that the migration determinants of the past will be relevant in the future and that no 'new' migration determinants may play an important role. For example, a migration trend forecast for the UK published in early 2016 did not consider the possibility of the country's exit from the EU, and the resulting migration outcomes;
- Finally, forecasting models fail to account for the interaction effects among changing migration determinants and feedback mechanisms (Bijak, 2006; de Haas et al., 2010). Thus, while technology may have an impact on migration, migration may also affect technology (e.g. mobile phone-based cash transfers).

In an earlier conceptual paper for the GMF project, de Haas et al. (2010) discussed the important role of uncertainties in understanding migration futures and identified two types of uncertainties: 1) model uncertainties and 2) contextual uncertainties. Model uncertainties relate to the complex ways in which different factors affect migration. In other words: 'Uncertainty here concerns the extent to which the causal structure of a strategically relevant variable is unknown' (Schoemaker, 1993: 197). Faced with model uncertainties, designing a quantitative forecasting model that assigns relative importance to factors such as income, education levels, or age distributions can already be problematic as the assignments of different 'weights' to such factors somehow assumes that we can objectively determine their independent 'impact' on migration.

Moreover, more often than not, the effect of such factors is likely to be complex and nonlinear. More intangible factors, such as power asymmetries, migration policies, or the changing aspirations of potential migrants, are impossible to fully model quantitatively. In addition, the level of interaction between such factors is typically very high, which means that modelling migration determinants as a series of bilateral, independent, causal relationships is highly simplistic. For instance, many debates on migration futures focus on demographic trends such as the ‘youth bulge’ (in origin countries) and ageing (in destination countries). However, demographic factors do not ‘cause’ migration, but may be associated to particular migration trends *in combination with* other political, economic and other migration determinants. This makes demographics alone a rather poor predictor, because they are but one of the many factors affecting migration.

If we could reduce model uncertainties, we would still face contextual uncertainties, which involve the fundamental lack of knowledge about the future evolution of migration determinants. Contextual uncertainties not only refer to migration determinants, but also may include factors which have indirect, albeit significant, migration consequences. The price of oil offers an insightful example. While an energy crisis may not immediately strike us as being a major migration determinant, history has shown that the wider economic and geopolitical repercussion of the 1973 Oil Crisis had indirect, but very deep effects on European countries and the Gulf countries, leading to the reduction of recruitment of guestworkers in Europe, fundamental economic restructuring, and the rise of the Gulf countries as receivers of immigrants (Castles et al., 2014).

Contextual factors are difficult to capture in forecasting studies, which conventionally focus on migration determinants that are most resistant to sudden change and relatively easy to predict in the short- and medium-term (e.g. demographic shifts like population ageing and educational attainments) (Dustmann et al., 2003; Kaczmarczyk and Okolski, 2005; Schmidt and Fertig, 2000). One example of a contextual condition which could significantly impact future migration, but which is harder to capture in a conventional forecasting model, is advancing technology. In the early 1990s, mobile phones were a luxury item owned by business executives. More than two decades later, they are not only a gadget for making phone calls, but also keep their users constantly updated and connected to the world. Technology developers envisage that other daily functions will be similarly revolutionised. Examples include driverless cars (Hars, 2017), 3D printing (Crawford, 2014), robotics for personal care (which are already becoming a reality in Japan) and army robots (Charova et al., 2011). Technological advances will undoubtedly affect migration. While some advances may generate demand for migrant workers, others, like outsourcing or automation, may reduce demand. Further, while improvements in transport and communication technologies are often assumed to spur migration, the opposite case can also be made, as they facilitate commuting, teleworking, trade and relocation of production to low-wage countries (outsourcing), which can take away the need for people to change residency.

A number of studies have recognised the limitations of forecasting models and scholars have therefore recommended that such models make explicit their underlying assumptions (Bijak et al., 2008), identify possible interactions among variables (Bijak, 2006), and account for a greater range of variables in their models (Giubilaro, 1997). While welcome, these adaptations of statistical forecasts still consider only relatively certain and quantifiable migration determinants and exclude more uncertain and unquantifiable factors from their analyses. The GMF Scenario Methodology has been developed to scientifically examine contextual uncertainties. The following section will discuss the key elements of this methodology as well as its positioning within scenario-building more generally.

4 Using scenarios to study migration futures

4.1 An overview of scenario approaches

From military origins in the 1950s, scenario approaches have been applied by governments, the corporate world and non-profit organisations as a method to challenge existing perceptions of future developments, create alternative visions of the future, and strategically plan and improve decision making (Martelli, 2001; Mietzner and Reger, 2005). A multitude of scenario approaches and methodologies exist today, and have their origins in two overarching schools of thought that emerged in the 1960s: the Intuitive Logics School, led by futurist Herman Kahn, and *La Prospective*, led by Gaston Berger (Bradfield et al., 2005).

The Intuitive Logics School encourages the exploration of causal processes and complex relationships among multiple factors as a way to gain insights and improve decision making processes (Amer et al., 2013). Herman Kahn's scenario approach emerged as a strategic tool for the US military during the Cold War and evolved as Kahn continued his work as a systems theorist at RAND Corporation. Kahn's scenarios probed and investigated complex processes to clarify and understand relationships among factors, stimulate the imagination and propose policy alternatives (Mietzner and Reger, 2005; Paoletti et al., 2010). Pierre Wack and a team of planners at Royal Dutch Shell further developed Kahn's scenario approach and applied it to the energy industry. In his two seminal articles, Wack described how scenario planning was introduced at Royal Dutch Shell in the late 1960s and early 1970s, resulting in a renowned scenario that anticipated the 1973 oil crisis (Wack, 1985a, 1985b). Its effective scenario application prompted a number of corporations to adopt scenarios for strategic thinking and planning. The Intuitive Logics School approach has received considerable attention in the futures literature (Bradfield et al., 2005) and is the method we adapted and further developed to the study of migration.

The second school of thought is attributed to French philosopher Gaston Berger, founder of *La Prospective*. This approach appreciates the contribution of conventional quantitative forecasting methods, but also recognises their weaknesses, primarily their assumptions of structural continuity and extrapolation of the present into the future (Bradfield et al., 2005; Paoletti et al., 2010). At its core, *La Prospective* serves to identify *desirable futures* and, using quantitative methods, examines how several variables must evolve to bring such futures to fruition. We embraced the Intuitive Logics School as it was the most suitable approach to develop exploratory scenarios of the future of global migration. This was the case given the conditions of limited data availability and quality, a wide range of quantifiable and non-quantifiable factors and a high degree of complexity in terms of the numbers of migration determinants and their interactions, both of which remain key challenges for studying migration futures.

4.2 Adopting and adapting an Intuitive Logics School approach

The Intuitive Logics School broadens our thinking about the future and forces us to look beyond relatively certain factors and trends, by enabling the elaboration of future scenarios that differ greatly in their structure, but are all *plausible* (Van der Heijden, 2005). 'Plausible' here means that a scenario is possible and logically reasonable – and its value is *not* in relation to the likelihood of its happening. Scenario building is a strategic, imaginative intellectual process that enables us to think about multiple possible future situations. This stands in contrast to forecasting techniques, which tend to extrapolate recent trends into the future, and do not examine more uncertain yet possible factors, for which we may be the least prepared, in terms of policy planning. Scenarios need to be internally coherent and intellectually valid in terms of how they consider the interplay between different factors. This is why

there is no place for apocalyptic or utopian scenarios within this methodology, as this is not reflective of reality.

Thus, the Intuitive Logics scenario methodology brings together two components: scientific and fact-based knowledge on the one hand, and innovative and creative thinking on the other. First, a set of techniques aims to question and verify knowledge we possess of the past and then harness information about the future that is available in a wide range of areas, which includes discovering patterns that may be undetected (Martelli, 2001). Scenario building activities prompt us to ask questions such as ‘What is changing? What can change? Who and what can bring about the changes?’ (Barbieri Masini and Medina Vasquez, 2000). For example, we can ask whether it is possible that, although today several governments seem to ‘struggle’ to limit immigration, in the future they might struggle to attract immigrants. If that is a possibility, we can explore further which societies might see such a development and under what conditions.

Second, after building a solid knowledge base, the scenario building process gives space to innovative and creative thinking to describe possible future developments. For instance, after having gathered state-of-the-art research on possible technological advancements, we ask ourselves how these might affect our societies, our work and home environments, the labour structure, working conditions, and so on. Scenario building workshops are the fora for such thinking, as they bring together diverse groups of participants with different types of expertise and backgrounds. Workshop participants share and evaluate their knowledge, question their assumptions and reflect upon observations of their life and work, to discover early signs of change, also called ‘weak signals’ or ‘germs of change’ (Van der Heijden, 2005). For instance, some participants in the 2010 workshop in Europe wondered how health care sectors in developed countries might meet their future labour demand and explored the future role of robots in healthcare, following early signs of Japan’s experimentation with nurse robots. This allowed for scenarios in which increasing shortages of healthcare workers would (at least partially) result in increased robotisation instead of the alternative scenario of increased immigration of such workers. Participants also explored the idea of a potential re-valuation, re-appreciation and higher pay for healthcare workers in a situation of increasing demand for them and a dwindling domestic supply of such workers.

The GMF project built a methodological framework that integrates the Intuitive Logics School’s scenario approach with insights from contemporary migration scholarship. The resulting GMF Scenario Methodology consisted of three overarching phases:

- ***Theoretical and methodological research***: The project started with a review of the literature on migration futures and scenario methodologies as well as a review of the state-of-the-art research on the political, economic, cultural, demographic, technological and environmental factors driving migration (de Haas et al., 2010; Paoletti et al., 2010). This phase also involved the reconceptualisation and broadening of core notions of the Intuitive Logics School’s scenario methodology to examine a social phenomenon, such as migration, rather than a corporation’s future interests.
- ***Scenario building – groundwork and workshops***: A series of activities led to the creation of scenarios. Initially, primary data were collected through 33 interviews with key participants who had various types of expertise in migration to learn what they perceived to be important factors impacting present and future global migration patterns. This was in order to identify the areas of greatest uncertainty with respect to future migration patterns, and to understand their perceptions of desirable and undesirable migration futures. This was followed by a two and a

half day scenario building workshop¹ (further described in a later section), which gathered 25 participants to develop 16 first-generation migration scenarios for Northern Europe, Southern Europe and North Africa, as well as a list of key relative certainties and relative uncertainties for each region.²

- The scenario building phase continued with research to re-examine and amend the list of future certainties and uncertainties for each region and to substantiate, or modify, eight of the 16 first-generation scenarios. Through an online survey, we gathered feedback on the eight scenarios from 50 migration experts and stakeholders across the world and from different professional sectors; they evaluated the plausibility of the scenarios and challenged any underlying problematic assumptions (IMI, 2011a). A year later, a second scenario workshop was attended by 25 participants, primarily from North Africa and Europe, to refine the scenarios and conduct role-playing exercises to develop policy responses to potential migration futures.³
- The second workshop enabled the unanimous identification by participants of four migration determinants that could be further explored through additional research and which were crucial to understanding future migrations because of their potential great impact on migration. They were demographic factors, socio-cultural changes (e.g. xenophobia), environmental change and technological innovation. This led to the organisation of an expert workshop which brought together 11 experts in the aforementioned fields, who were invited to present on emerging trends and future uncertainties and reflect on their links to migration drivers and patterns (IMI, 2011b).⁴ A second workshop, which took advantage of parallel initiatives on environmental change, involved about 20 scholars, policy makers and practitioners from the fields of environmental and climate science and migration, and aimed to improve our understanding of the relationship between environmental change and migration.⁵
- **Consolidation:** In this last phase the research team reviewed the lessons learned from using the methodology to refine the theoretical framework (e.g. adding evidence of how countries shape migration), generate new hypotheses and identifying the most effective use of scenarios and the GMF Scenario Methodology as a research method in migration studies (Ramirez et al., 2015).⁶

From 2012, the GMF project entered an ‘extension’ phase, during which the research team expanded the geographical scope of the project by applying the scenario methodology to the Horn of Africa and Yemen, in partnership with the Regional Mixed Migration Secretariat, and the Pacific Region, in partnership with the University of Waikato. These regional expansions enabled our project team to further test the methodology and to understand the extent to which potential future migration drivers, trends, and patterns observed in scenarios for Europe and North Africa converged or diverged with those observed in the Horn of Africa and Yemen and the Pacific. The remainder of the paper will further elaborate on the first two steps of the GMF Scenario Methodology, as these are the two central innovative components of our approach.

¹ The first scenario workshop took place in The Hague, the Netherlands, on 29–30 June 2010.

² The first scenario workshop also included a group working on China. While the group generated valuable knowledge, the research team determined that the insights gathered will be used to substantiate the Europe and North Africa scenarios rather than to develop distinct scenarios for migration in China.

³ The second scenario workshop took place in Cairo, Egypt, on 13–14 May 2011.

⁴ The first expert workshop was held in Ponta Delgada in the Azores on 11 September 2011.

⁵ The second expert workshop was held in Oxford on 21–22 June 2012. IMI (2012) is the resulting report.

⁶ This included an Oxford-based symposium entitled ‘Using Scenarios in Academic Research to Study the Future’, held on 26 May 2011, during which the research team presented the GMF Scenario Methodology and received feedback from other researchers and practitioners and encouraged other researchers to consider using and adapting the methodology for their research.

4.2.1 Scenario type, unit of analysis and time horizon

The GMF Scenario Methodology aims to develop scenarios that explore possible migration futures⁷ by expanding our knowledge of potential changes in external factors, including migration determinants beyond the direct control of governments, businesses and other relevant actors in international migration. In the business sector, scenario building is done for an ‘actor’, generally a corporation, within its (i) contextual and (ii) transactional environments. Van der Heijden (2005) defines the contextual environment as the space occupied by macro-level factors which impact an organisation, but which the organisation cannot influence directly or significantly (e.g. international law, economic transformations, demographic change, globalisation). In contrast, the transactional environment is a space occupied by meso- and micro-level factors that the organisation may alter, although the organisation may also be altered by such factors (e.g. competitors, vendors, national policy) (Van der Heijden, 2005).

By identifying the uncertainties in the contextual environment, scenarios help corporations recognise possible changes that would impact their operations. In the mid-1960s Pierre Wack and his team identified that the oil market may switch from a buyer’s to a seller’s market and that Middle Eastern countries may want to protect their valuable resource. They developed scenarios that challenged the *status quo* assumptions made by Royal Dutch Shell managers. The insights helped the managers anticipate the 1973 Oil Crisis, which allowed Royal Dutch Shell to react immediately to a shift in oil demand by adapting the company’s production strategy (Wack, 1985a, 1985b).

While we saw this approach as one valuable to study migration, we realised the need to adapt the methodology and units of analysis to study a social phenomenon rather than a corporation. Four conceptual challenges emerged: i) the definition of ‘actor’, generally an organisation, had to be replaced by migration, but it was unclear how migration could be defined and ‘delimited’; ii) the redefinition of the contextual and transactional environments to refer to a social phenomenon rather than a corporation; iii) the categorisation of migration policies either in the transactional or contextual environments, thereby determining whether they should be used as a key migration determinant during the elaboration of scenarios; and iv) the definition of the appropriate timeframe within which migration futures could or should be studied.

The first challenge reflected a key conceptual shift as we adapted scenarios to social science research – a corporation or an organisation has a clear operational environment, objectives (e.g. to maximise profit) and a timeframe for looking into the future (Schnaars, 1987). However, when exploring the future of international migration, we do not have such clearly circumscribed actors and interests, a well-defined geographical scope and timeframe. While our unit of analysis would be migration, it would not be possible to explore global migration. Initial discussions centred on the merits and demerits of focusing on a specific country, bilateral migration corridors, migration systems or specific migration categories. Ultimately, migration corridors and migration systems were excluded because these entities were based on current migration patterns, which may have hindered the exploration of structural changes in future migration patterns. For instance, a focus on the Mexico–US or Turkey–Germany corridors would assume that these migration corridors would remain equally important in the future and would obscure possible future migratory links with other countries. Focusing on specific groups of migrants was too constrained and would involve adopting questionable policy categories with which to define migrants. Eventually, we concluded that regions provided the most appropriate unit and level of analysis. Regional groupings offered the benefit of clustering a number of countries with varying levels and conditions of development as well as simultaneously taking into

⁷ Cf. Börjeson et al. (2006), who divide scenario types into three groups: predictive, which aim to identify what is probable; explorative, which strive to imagine what is possible; and normative, which target what is preferable.

account origin and destination country perspectives and varied migration patterns. Following this regional approach, the GMF project first developed scenarios for Europe and North Africa, and in a later stage for the Horn of Africa and Yemen, and the Pacific region.

After determining the unit of analysis, the team discussed adaptations to the contextual and transactional environments. In the GMF Scenario Methodology, the contextual space can be defined as the space in which macro-level factors such as international trade, finance and law and geo-politics operate, which may have significant repercussions on migration within, to and from the region (Börjeson et al., 2006: 727).⁸ For migration, the transactional space would include factors that are ‘endogenous’ to the process itself, such as migrant networks and migration policies, which together comprise the ‘internal dynamics’ of migration processes (de Haas, 2010b). The transactional environment in migration scenarios largely comprises actors – such as government agencies, employers, unions and employees and migrants – who both shape and are affected by migration.

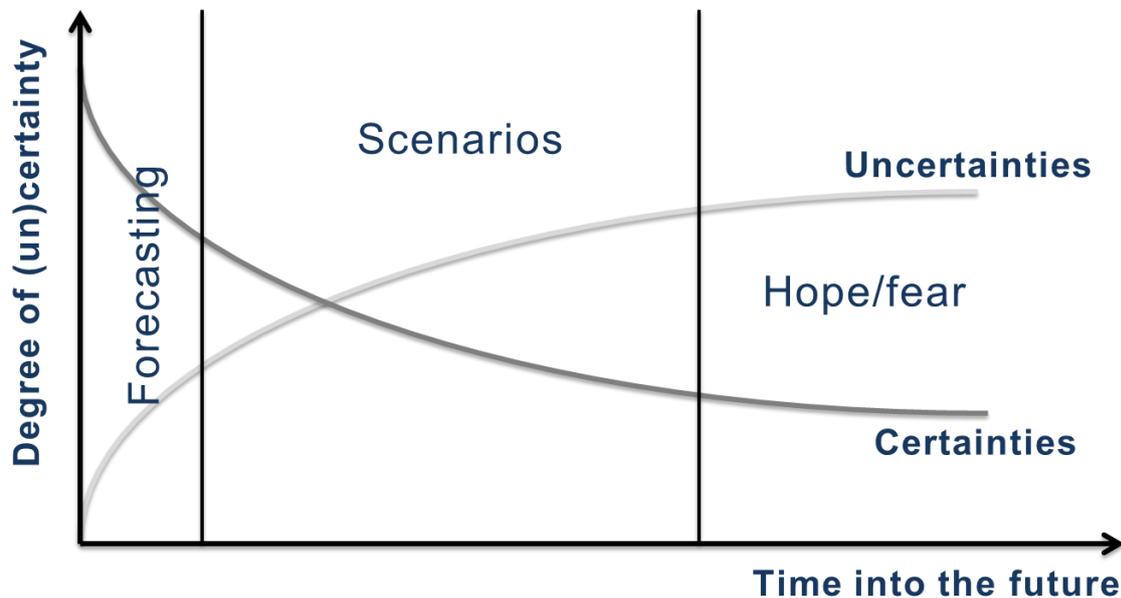
Based on these definitions, we decided that migration policies fit into the transactional environment, because migration policies are likely to be affected by migration processes themselves – for instance the large-scale immigration of refugees leading to immigration restrictions or the perceived shortages of particular immigrant categories – e.g. skilled professionals – leading to proactive immigration policies such as labour recruitment. On the other hand, migration policies may originate from global policy preferences and policy diffusion processes (de Haas et al., 2016; Simmons and Elkins, 2004). Additionally, policies can actively create migration flows – for instance in the 1950s New Zealand encouraged temporary migration from Pacific Island countries and territories to meet unskilled labour demand.⁹ However, because of a tendency to focus on migration policies to the exclusion of other migration determinants, migration policies were included in scenario building discussions only after participants examined other long-term, macro-level migration drivers.

The appropriate time horizon was the fourth element to be defined. In a business environment, the time span for planning varies according to the industry – in energy production, planning extends decades into the future, while rapid changes force technology companies to plan just a few years ahead. The guiding principle for establishing a time horizon is that balance must be kept between future developments that are certain and uncertain, which may shift the business environment (Van der Heijden 2005). Figure 1 shows the balance between certainties and uncertainties: as the level of certainty decreases, the usefulness of (often quantitative) forecasting decreases, increasing the value of scenarios as the best tool for investigating the future. Van der Heijden (2005) also recognised that when the level of uncertainty is too high, neither forecasts nor scenarios offer any value.

⁸ Early discussions raised the observation that for a country like the US the number of factors in the contextual environment may be limited given the impact of this country’s decisions on the global scale. We thank Carlos Vargas-Silva for this observation.

⁹ We pay tribute to the late Graeme Hugo for this observation and express our thanks for him encouraging us to reconsider our approach to migration policies in migration scenario work.

Figure 1 Balance of predictability and uncertainty in the business environment



Source: Authors' adaptation of Van der Heijden, 2005¹⁰

Since studying migration futures implies a focus on structural factors that change relatively slowly, such as demographics, energy production and climate change, *and* other macro-level factors that change very rapidly, such as technology, economic growth and labour market demands, we set the time horizon at 2030. By looking twenty years into the future, we could render the scenarios less speculative and more useful as tools to inform the public and policy makers. Having defined the key parameters of the GMF Scenario Methodology, the following sections outline how we adapted the 'building blocks' of scenario building, namely megatrends, relative certainties, relative uncertainties and assumptions.

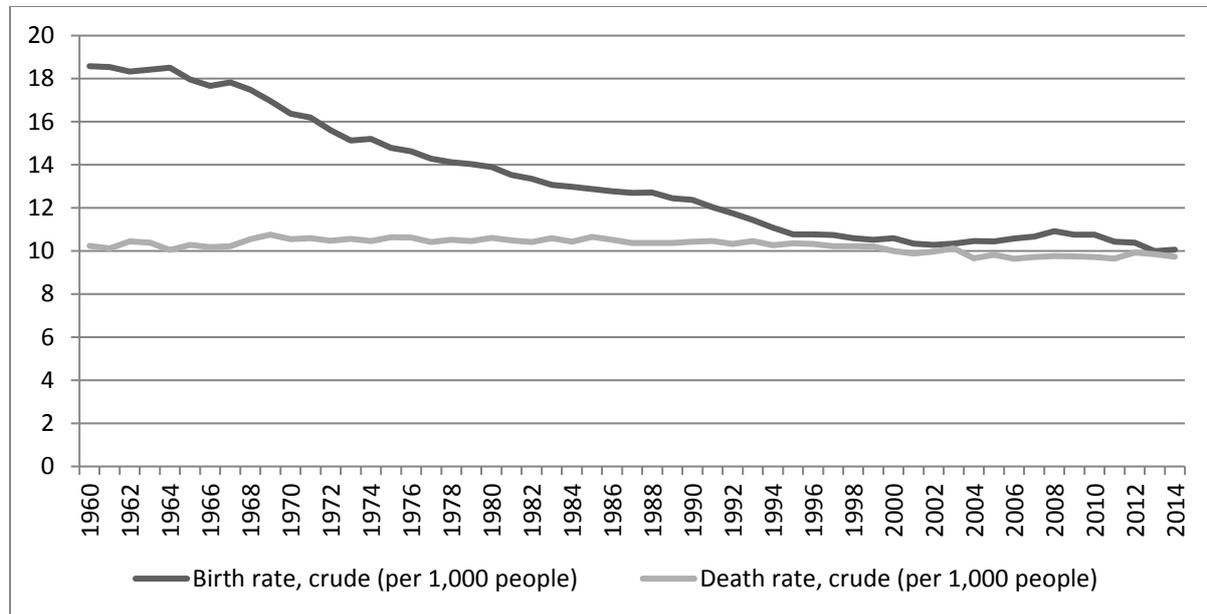
4.2.2 Megatrends and relative certainties

Megatrends can be defined as 'long-term driving forces or... trends that influence almost everything at all levels of society. They have great importance now, and we are relatively sure they will also have great importance in the future' (Copenhagen Institute for Futures Studies, 2008: 6). Their wide-reaching effects often reveal that megatrends consist of several factors whose future course is relatively certain. We refer to these constituent factors as 'relative certainties'. The future course of megatrends and relative certainties is fairly certain. An example of a megatrend is Europe's current phase in demographic transition, which includes the relative certainties of continued low birth rates and low death rates (Figure 2). In other words, the people who have already been born are going to have long lives as life expectancies increase, while birth rates will remain low, leading to relatively predictable ageing societies in Europe. We are also relatively certain about the age structure of national, regional and world populations at least a generation ahead, partly because most people who will be alive then have already been born, and partly because changes in birth and death rates are relatively slow compared to, for instance, economic and political trends, which can be sudden and unpredictable. So, even if EU

¹⁰ Adaptation of Figure 13. The balance of predictability and uncertainty in the business environment (Van der Heijden, 2005: 98).

birth rates start to rise significantly, it will take several decades before this will filter through in a way that fundamentally changes the shape of the age composition of populations.

Figure 2 Crude birth and death rates in the EU, per thousand people



Source: World Bank, World Development Indicators¹¹

Megatrends and relative certainties form the stable ‘inner architecture’ of each scenario, as they remain relatively constant across the scenarios. While the megatrends serve as relatively stable ‘anchors’, the scenarios diverge from one another based on how more uncertain factors evolve and interact in different ways with megatrends. Paradoxically, megatrends analysis also helps to reveal areas of great uncertainty in the future. For instance, we know that population ageing will take place in Europe, but in the context of more uncertain factors such as future labour markets, its impact will depend on a range of other factors including economic growth and skill levels. The way in which megatrends will interact with one another also highlights areas of future uncertainty. We know that technology will advance (e.g. robotics) and the proportion of working-age individuals relative to the total population will decline in Europe, but the uncertain interaction between these two trends raises questions about how the future structure of labour markets will impact technological change and to what extent technology may rapidly advance and mitigate the effects of a smaller working population through increasing productivity. To add to the complexity, what will happen also crucially depends on political factors. The Japanese government, for instance, has long since embarked on policies that stimulate automation and robotics (presumably because of high wage costs, but also to prevent the demand for migrant labour), while European governments have been less proactive in this respect. Taken together, these factors also affect people’s migration behaviour. Hence, we can learn a lot about the future – both in terms of what we know and what we do not know – by carrying out a rigorous examination of megatrends.

¹¹ Data extracted in November 2016.

4.2.3 Relative uncertainties and assumptions

The scenario methodology relies on the systematic mapping of uncertainties and the exposure of assumptions that underlie our visions of future migration changes. In the GMF Scenario Methodology, we distinguish between (i) relative uncertainties and (ii) assumptions.

A relative uncertainty is a ‘contextual’ factor (and migration determinant) about whose future evolution we have an incomplete understanding. As mentioned previously, relative uncertainties are often excluded from forecasting models and other types of futures methods. Prior examples of relative uncertainties given in this paper include geopolitical shifts, economic restructuring and labour demand. To illustrate how we think about relative uncertainties within the GMF Scenario Methodology, take the examples of a decreased reliance on fossil fuels and the advancement of technologies for alternative energies. These factors may have profound socioeconomic consequences, such as the location and costs of energy production. Changes in energy production are likely to determine which economies will blossom and which will decline, and where workers and what skills will be in high demand, with clear migration consequences. It is the role of the participants in the GMF Scenario Methodology to identify the contextual relative uncertainties which may significantly affect migration, so that they may be studied to understand their potential developments and potential impact on migration.

Assumptions are distinct from relative uncertainties because they are taken for granted, there is lack of awareness that surrounds them and they may create a false sense of certainty. Assumptions tend to reflect subconscious beliefs about the nature of a phenomenon, its future evolution and its impacts on migration. For instance, public debates often indicate that poverty leads to migration, ignoring empirical evidence that the poorest people are generally unable to migrate because they lack the financial resources and social connections to do so (Van Hear, 2014). The GMF Scenario Methodology aims to uncover and verify the accuracy of assumptions, to determine whether they should be incorporated as relative certainties or refined into relative uncertainties.

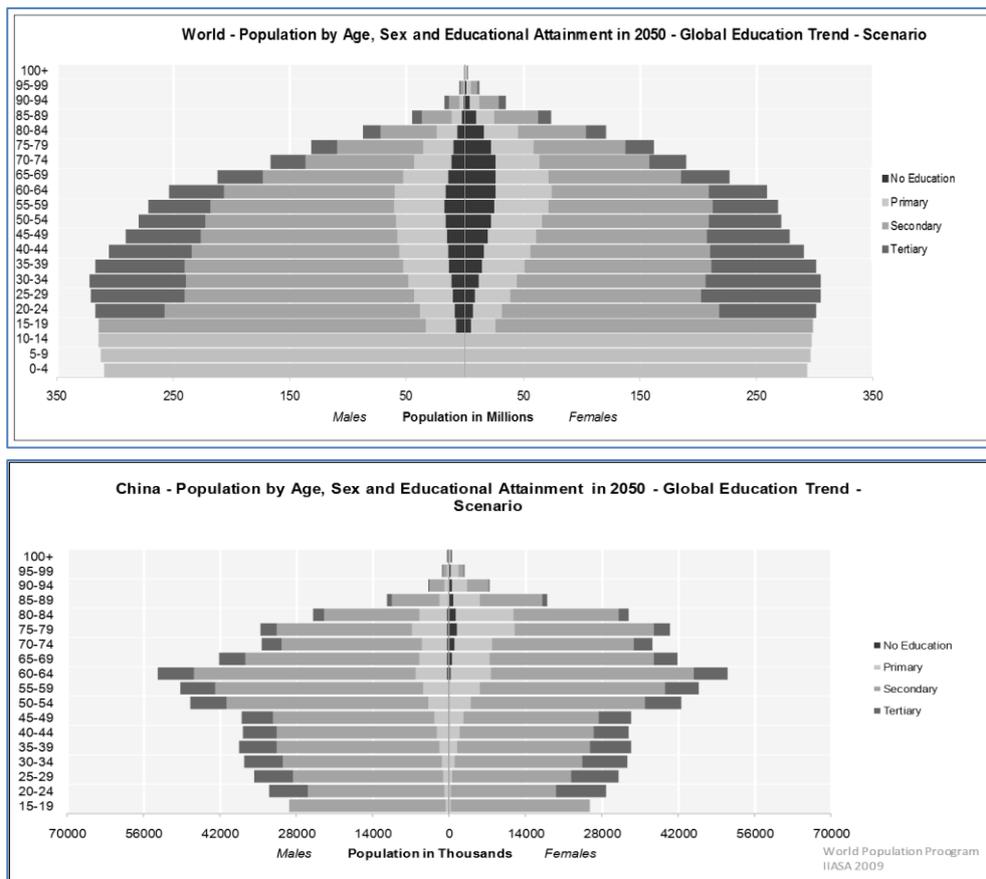
An assumption can prove inaccurate if we find that a phenomenon is not constituted in the way we conceive it, if it misinterprets the causal relation between factors (Alvesson and Sandberg, 2011) or if incomplete data lead to false assumptions. For instance, migration debates often assume that migration is at an all-time high and that rapid population growth in poor countries combined with growing ease of transport and communication will increase ‘migration pressure’ and lead to the future mass arrival of low-skilled workers and refugees. However, this ignores the fact that on a global scale there has been no acceleration of international migration over the past decades (Czaika and de Haas, 2013a), and that important emigration countries, which, not coincidentally, are also middle-income countries (such as Mexico, Turkey, Morocco and the Philippines) have experienced rapidly decreasing fertility levels over the past decades. This global demographic transition will slow down population growth in many countries in the coming decades, accelerating global population ageing (Lutz et al., 2008).

This defies popular ideas in many Western circles that fertility rates in origin countries continue to be very high. In fact, fertility levels and birth rates in many countries have been decreasing fast. In the future this is likely to translate into a further slowdown of population growth and the onset of ageing processes. This might mean that the emigration potential of current high-emigration countries may decrease in the future. At the same time, the emigration potential of poorer countries, such as in sub-Saharan Africa, where demographic transitions are lagging behind and increasing wealth and education may well enable and inspire more people to migrate, may increase. Such key migration drivers are fundamentally uncertain and can therefore only be taken systematically into account by deploying the proposed GMF Scenarios Methodology, instead of assuming their future stability.

Global demographic projections that account for future population distributions in 2050 suggest an ageing population and increasing education levels among younger cohorts, a trend that is particularly strong in the projection of China's population in 2050 (Figure 3). Whether this will actually lead to increasing migration of educated young people cannot be answered without knowledge about future political, economic and other trends in different world regions – that is, contextual uncertainties. Rapidly declining fertility levels in many emigration countries also imply that we cannot take for granted that there will be a quasi-unlimited supply of low-skilled workers that are ready to migrate as soon as the opportunity presents itself. This is an example of a key assumption underlying many policy debates, which turns out to be much more uncertain upon closer scrutiny. In fact, through global demographic ageing, we cannot exclude the possibility that labour will become scarcer on a global level. We also need to question implicit assumptions around the future stable political situation and continuous economic growth in developed countries when thinking about the future of migration.

Assumptions may also conceal model uncertainties, reflecting the imperfect theoretical understanding of how larger processes of political, economic, cultural, technological and environmental change will affect migration. For instance, in public debates it is commonly argued that the best way to solve the 'problem' of immigration is to 'develop' immigrants' origin countries, relieving the need to migrate. In addition to ignoring the fact that that such migration is partly driven by the structure of labour market demand in destination societies, this belief is based on the assumption that development and migration are substitutes and that a reduction in poverty will result in less migration. However, there is ample evidence from historical and contemporary migration that the relation between development and migration is fundamentally non-linear and that economic and human development is associated with *increasing* levels of migration and mobility, particularly from countries experiencing low to medium levels of development (cf. de Haas, 2010a; Hatton and Williamson, 1998; Skeldon, 2012; Zelinsky, 1971).

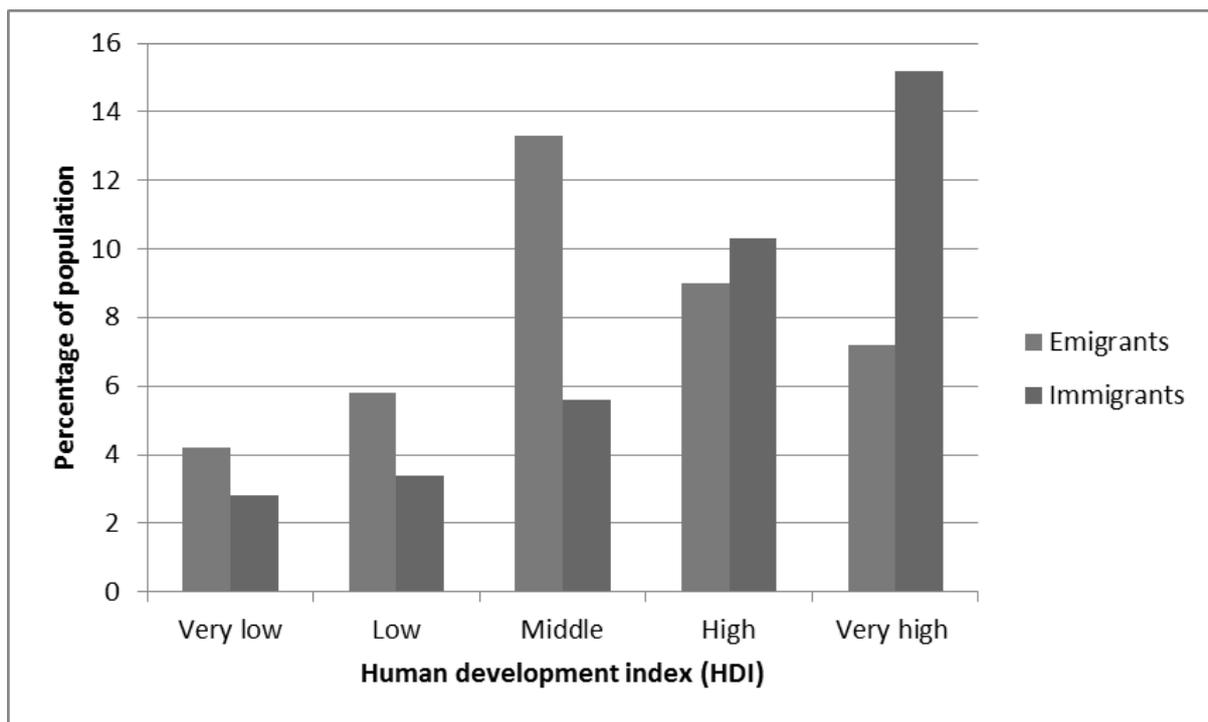
Figure 3 World and China population by age, gender and education, 2050 projections



Source: Wolfgang Lutz, Vienna Institute of Demography, Austrian Academy of Sciences

Figure 4 suggests that while immigration increases as the human development level of countries increases, emigration initially also increases. Only after a certain threshold of economic and human development is reached, emigration tends to decrease and countries tend to transform from net emigration into net immigration countries, while overall levels of immigration and emigration in highly developed countries are much higher than in poorer countries. This non-linear and rather counter-intuitive relationship between development and migration can be partly explained by the fact that economic and human development tends to increase people's capabilities and aspirations to migrate (de Haas, 2010a). This is particularly relevant for international migration, which often requires significant financial, social and human resources. This awareness has fundamental consequences for the way in which we assess how factors such as economic growth and educational expansion may affect migration.

Figure 4 Association between HDI scores and immigrant/emigrant stocks



Source: Hein de Haas, 2010a : 29.

This exemplifies that assumptions have to be made explicit and verified, as they may conceal contextual or model uncertainties. Failing to do so may easily lead us to take for granted certain migration futures (Wright, 2000). This systematic process of questioning assumptions is not only achieved by the input of scientific insights, but also through the inclusion of a diverse range of academic and non-academic participants from various backgrounds in scenario building workshops.

4.2.4 Participants: their role and characteristics

A pillar of scenario building is its highly participatory nature. Scenario building requires repeated input from participants from diverse geographical backgrounds, occupational sectors and disciplines, including participants with expertise in migration as well as in other areas. In the GMF project, participants included prominent migration scholars from political science, geography, and the environmental sciences, to name a few; policy makers working on migration issues; representatives of business leaders (including from Dahabshiil and Shell), international organisations (including the International Labour Organization and the World Health Organization), trade unionists (including the UK's Trades Union Congress), civil society and non-governmental organisations and the media (including BBC Africa).

For our purposes, participants consisted of both experts and stakeholders. Experts are academics or researchers who have developed deep knowledge on migration through research and/or involvement in migration policy issues. Stakeholders are individuals who, by virtue of their work, have a key stake, either directly or indirectly, in migration issues, and who therefore hold significant practical expertise on migration issues. Stakeholders may include employers, trade union leaders, NGO members and government officials. The varied perspectives of experts and stakeholders are valuable as they introduce new ideas and bring attention to possible new trends (Van der Heijden, 2005; Wright, 2000). Moreover, the interaction and knowledge exchange between experts and stakeholders during scenario building workshops often leads to participants' gaining new insights and challenging their existing

assumptions about migration. For instance, while a health worker may know about migration from contact with international colleagues – such as nurses and doctors – and patients, a business executive may see migration in terms of the availability, quality and costs of labour, with less emphasis on the workers' nationality.

Participants of scenario workshops engage in exchanges that expose diverse convictions and assumptions and participants are encouraged to discuss and question migration from different perspectives. In our experience, this practice of critically questioning assumptions can be an unsettling process; therefore participants must be persons 'with the capacity to doubt', high levels of self-awareness, the ability to listen and ask questions, and the ability to suspend personal judgment (Barbieri Masini and Medina Vasquez, 2000: 57). The choice of participants is a crucial step in the scenario building process as participants are a primary source of information. Therefore, significant time and attention must be given to their selection.

4.2.5 Scenario building workshops

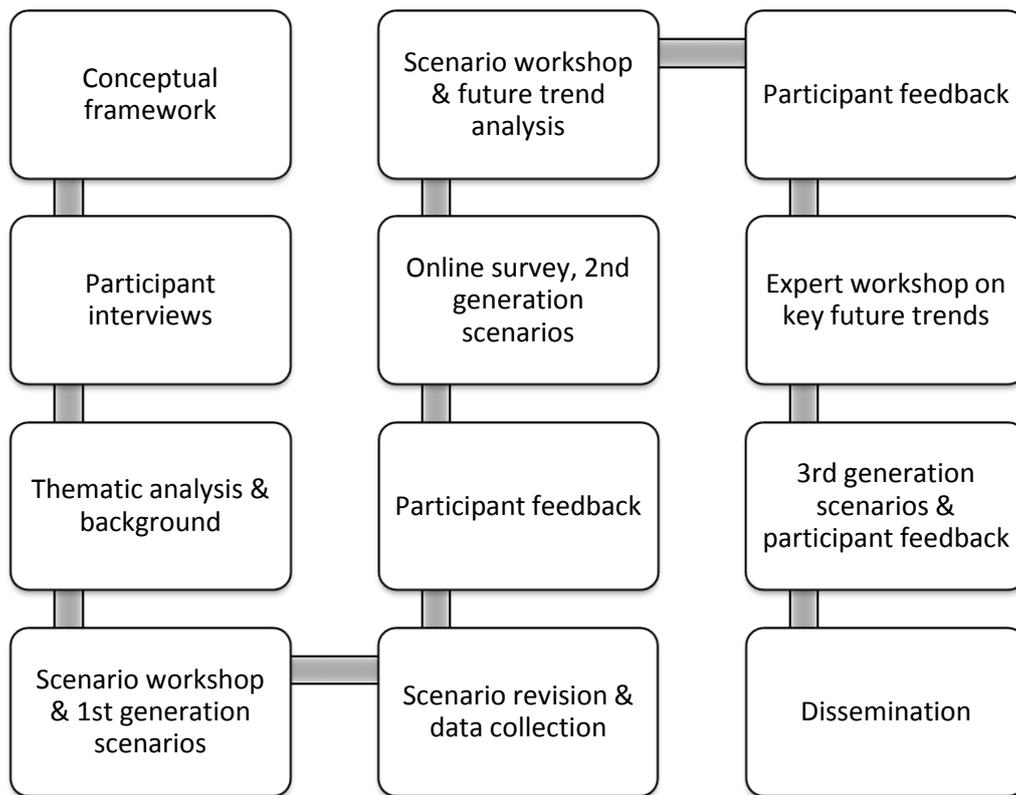
Scenario building workshops are the primary fora for first-generation scenario building. During workshops, the research team guides participants through a series of systematic exercises that lead to the creation of scenario narratives that explore potential futures of international migration in a region of interest. We outline below the steps taken to generate the GMF project's Europe and North Africa scenarios, with an emphasis on the activities in Phase 2 of the GMF Scenario Methodology (Figure 5).

The scenario building process began with 33 participant interviews, which led to the identification of several recurrent factors which participants believed to be central to driving future migration patterns.¹² In June 2010, 25 participants took part in a two-day scenario building workshop focusing on future migration in Europe and North Africa.

The scenario workshops were structured around a series of exercises. The first workshop gathered participants for two and a half days, during which brainstorming sessions, stimulated by four main exercises, took participants through reflections on their knowledge of past and contemporary migration and possible developments in the future. An opening exercise guided participants to analyse what were the key events or trends of the past that impacted the migration patterns we observe in the present. This exercise helped participants recognise their knowledge of migration and specific psychological biases, such as the tendency to anchor ourselves on one specific event which comes readily to our mind when we think of the past and to feel overconfident about what we know (Schoemaker, 1993).

¹² Based on the participant interviews, the project team published a key themes report, which is confidential and was shared only with the interviewees and participants in the first workshop.

Figure 5 The scenario building process from concepts to dissemination

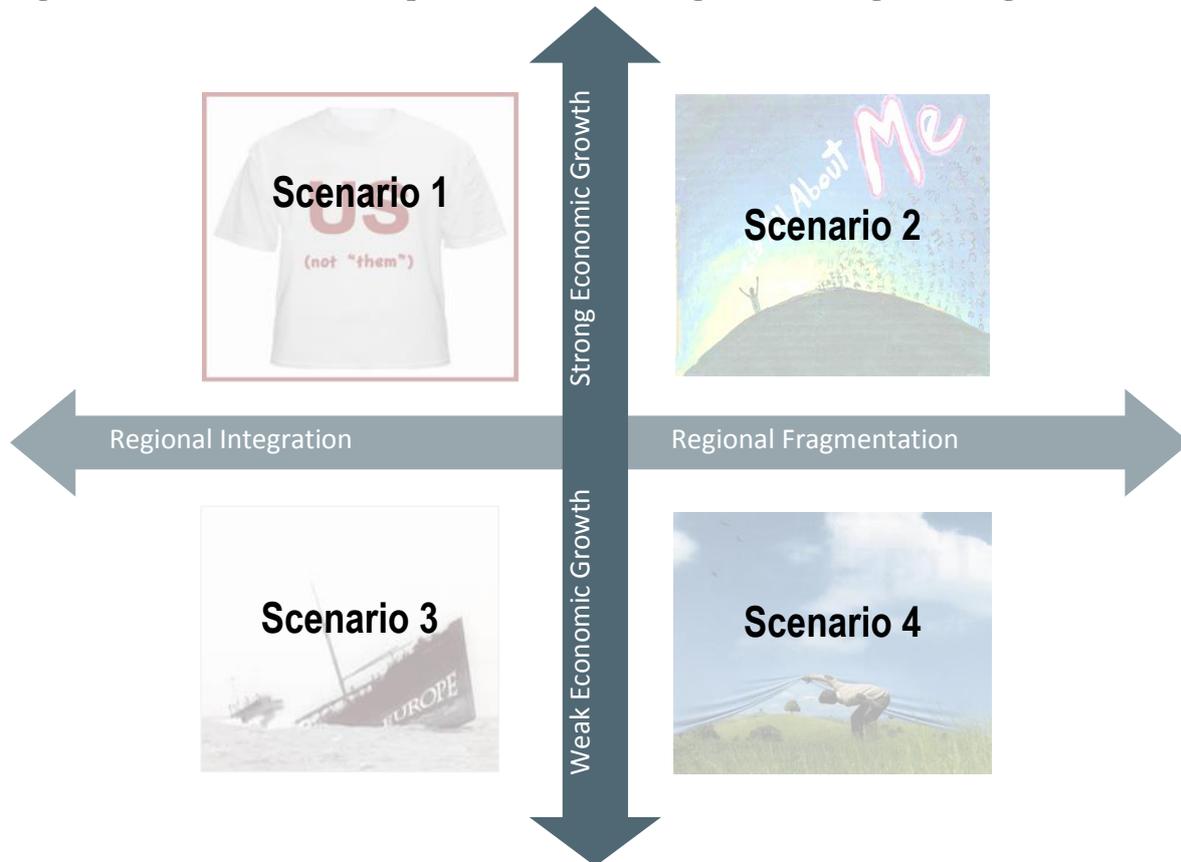


Source: Authors' own

After looking at past migration patterns and drivers, the research team guided participants through three additional exercises which prompted them to identify relative certainties and relative uncertainties which could be key to future migration patterns, and to weigh their potential impact on migration. Through the exercises, participants questioned each other's knowledge on various aspects of migration, migration drivers, their current and future developments and their potential relations to migration in the future.

Eventually, participants were asked to select the two relative uncertainties that were simultaneously the most important for migration and the most uncertain in terms of their future evolution. These two relative uncertainties formed the building blocks of a two-by-two scenario matrix (Figure 6). The scenario matrix sets the 'outer boundaries' of the scenario narratives. For instance for the European scenarios, participants decided that the future of the EU (that is, its further integration or, conversely, disintegration) was one of the most important as well as most uncertain factors (in terms of the direction of change) affecting future migration in the region. A second key factor affecting migration in the EU migration scenario was future economic growth, a factor with a highly uncertain future that crucially depends on governments' political and economic positions and decisions.

Figure 6 Scenario matrix: Europe in 2030 - Economic growth and regional integration



Source: International Migration Institute (2017, forthcoming)

After the first workshop, the research team evaluated and refined the relative certainties, relative uncertainties, and scenarios identified and created by participants through a review of the scientific literature. The team then presented the refined factors and scenarios to participants as well as to an additional fifty individuals working in academia, civil society, government, the private sector and international organisations, who had not been previously involved in the project, via an online survey. This process generated insights, which were used to elaborate and further refine the scenarios and turn them into second-generation scenarios.

In May 2011, a second scenario workshop gathered participants to obtain further feedback. The workshop was attended by some of the first workshop’s participants and a number of new experts and stakeholders from North Africa and sub-Saharan Africa. Through this iteration of the scenarios, participants had the opportunity to review the ideas they had developed in the first workshop and to evaluate their evolution in the scenario narratives. New participants introduced new evidence and questioned the assumptions built into the scenarios.

In September 2011, a third workshop was held with the sole participation of subject experts on demography, technology, environment and socio-cultural changes (for instance, xenophobia), which were factors that had been identified in the two workshops as needing further exploration. The workshop’s objective was to learn the state-of-the-art research on these factors and the experts’ expectations of future changes in each of these fields. The insights from these expert discussions were integrated in the final iteration of the project’s scenarios.

For the scenarios for the Horn of Africa and Yemen and the Pacific regions, a more streamlined process was undertaken. Having benefited from past experience and from the collaboration with

excellent regional partners, the research team was able to improve the process by: holding only one workshop with the most suitable future-thinking participants; following up with a substantive research component with the partners and their collaborators; having rapid feedback from a few participants interested in prolonging their collaboration and our regional partners before publishing the scenarios in two brief reports (International Migration Institute and Regional Mixed Migration Secretariat, 2012; International Migration Institute and National Institute of Demographic and Economy Analysis, University of Waikato, 2013).

5 Benefits of the GMF Scenario Methodology

5.1 Challenging existing theories and raising new research questions and insights

In their seminal article, Massey et al. (1993) reviewed theories of international migration and highlighted that while existing migration theories tend to explain migration from specific perspectives and levels of analyses, these are not *necessarily* logically inconsistent and researchers should therefore attempt to bridge theoretical divides. Interdisciplinary collaboration in migration research is growing and analytical room for more synergetic theoretical models seems to be appearing. For instance, de Haas (2010a) argued that virtually all forms of migration can be conceptualised as a function of capabilities and aspirations within a given set of opportunity structures. Such a perspective would allow us to embed our analysis of migration decision making processes by individuals and families within a broader analysis of macro-structural migration determinants.

While theoretical innovation can partly be achieved within ‘normal’ social science, the scenario methodology is a useful tool to systematically question assumptions and ‘certainties’ about the nature and determinants of migration as it supports the questioning of extant theories through a systematic process of problematisation (cf. Alvesson and Sandberg, 2011). Scenario work expands the boundaries of knowledge, identifies ‘weak signals’ and stimulates innovative thinking (Van der Heijden, 2005). The workshop discussions served to challenge what Alvesson and Sandberg (2011) call ‘ideological’ assumptions, which reflect normative discourses that dominate public debates, and proposed alternative ways of conceptualising migration. For instance, rather than framing questions about future migration management in terms of how to limit migration to the EU, participants were asked to consider other and potentially more useful lines of inquiry. Such questions included: Under what socio-economic, political and environmental circumstances do people migrate? What explains fluctuations and changing migration patterns and trends? Who migrates and who stays? Where will future migrants come from and go to?

Workshop discussions were also effective in challenging participants’ assumptions about migration. Examples include the ways we often categorise migrants and migration, such as the way in which Morocco and Turkey are often represented as ‘origin countries’ and wealthy economies as a source of skilled ‘expats’. Participants discussed various types of movement indiscriminately, without being constrained by policy-related migrant categories – such as migrant workers, family reunification, high-skilled migrants and expats, which often do not adequately reflect the multiple motivations behind migration. Participants explored many possible future contextual changes and considered how these may affect different segments of society and influence various forms of movement. Categories such as ‘origin’ or ‘destination’ countries were questioned (because all countries are both, albeit to varying degrees) as well as the common assumption that Europe, North America and Australia will remain major migration destinations in the future. The discussions also raised questions about the assumed linear progression from origin to destination countries along processes of development, and the possibility of countries experiencing ‘reverse migration transitions’, shifting from net immigration and

net emigration countries. While migration reversals have been observed in some countries – for instance in Latin America in the 1990s and 2000s – when applied to the European context this option was less easily recognised, although recent evidence from Southern Europe supports this notion.

Through the process of questioning our existing knowledge, a number of new research questions emerged which challenged core assumptions on migration processes. For example, can we really take for granted that the emergence of a ‘youth bulge’ in many developing countries will inevitably generate strong migration flows to North America and Europe? The answer to this question is dependent on other conditions, such as opportunities in origin countries, current destination countries or in ‘emerging’ destinations such as Brazil, China, Turkey or Russia. The links between technological change and migration also sparked much discussion. How has technological change affected migration in the past? What do we know of the implications of technology on contemporary migration? What will future technological developments be like and how will these affect future migration? These discussions uncovered fundamental model uncertainties. For instance, it cannot be taken for granted that improvements in communication and transport technology will boost migration, as this can also ‘absorb’ (substitute) potential migration through trade, outsourcing, teleworking and commuting (cf. de Haas, 2009; Skeldon, 2012; Zelinsky, 1971). The fact that the world has become much more *mobile* through a rapid increase in road and air travel for work, business and leisure but has not become more migratory in relative terms (see above) may prove this hypothesis right. In fact, the scenario workshops revealed that (internal) migration rates have been going *down* in countries like Japan, the US and the Netherlands.

Such cases do not provide sufficient evidence that technology cannot increase migration; rather, we should be aware not to assume a positive linear relation between technology and migration rates. Other questions related to the technology–migration nexus that emerged during the workshops included: Will robotics reduce the need for service workers, for instance in the healthcare industry? Will telemedicine, and telecommuting more generally, reduce the need for high mobility among professionals in certain industries? Will a possible increasing scarcity of diverse forms of skilled labour, or the political opposition against immigration, provide incentives for corporations and governments to stimulate robotics and the further automation of production processes and service delivery?

Other research insights that emerged from the GMF Scenario Methodology include: i) the importance of energy, particularly the evolution of alternative energy technologies and their future centres of innovation and production, which might in turn affect economic opportunities, labour market dynamics, and, hence, migration; ii) the need to see the impact of demographic and environmental factors on migration as indirect rather than direct (see also Foresight, 2011); iii) the uncertain effects of human development in low- and middle-income level countries on migration aspirations and capabilities; and iv) how possible future scarcity of particular forms of lower-skilled labour may lead to the re-evaluation and perhaps even re-appreciation of certain (currently low status) jobs or, alternatively, may further stimulate technological change (particularly robotics) and/or outsourcing. The latter issue points to the fact that political preferences around migration may also have an influence on technology. Among other things, these new perspectives question the rather popular assumption that demographic change will inevitably lead to more migration from poor to wealthy countries by stressing that such impacts are far from certain and strongly dependent on a whole range of other economic, political and technological factors.

5.2 Generating empirical evidence¹³

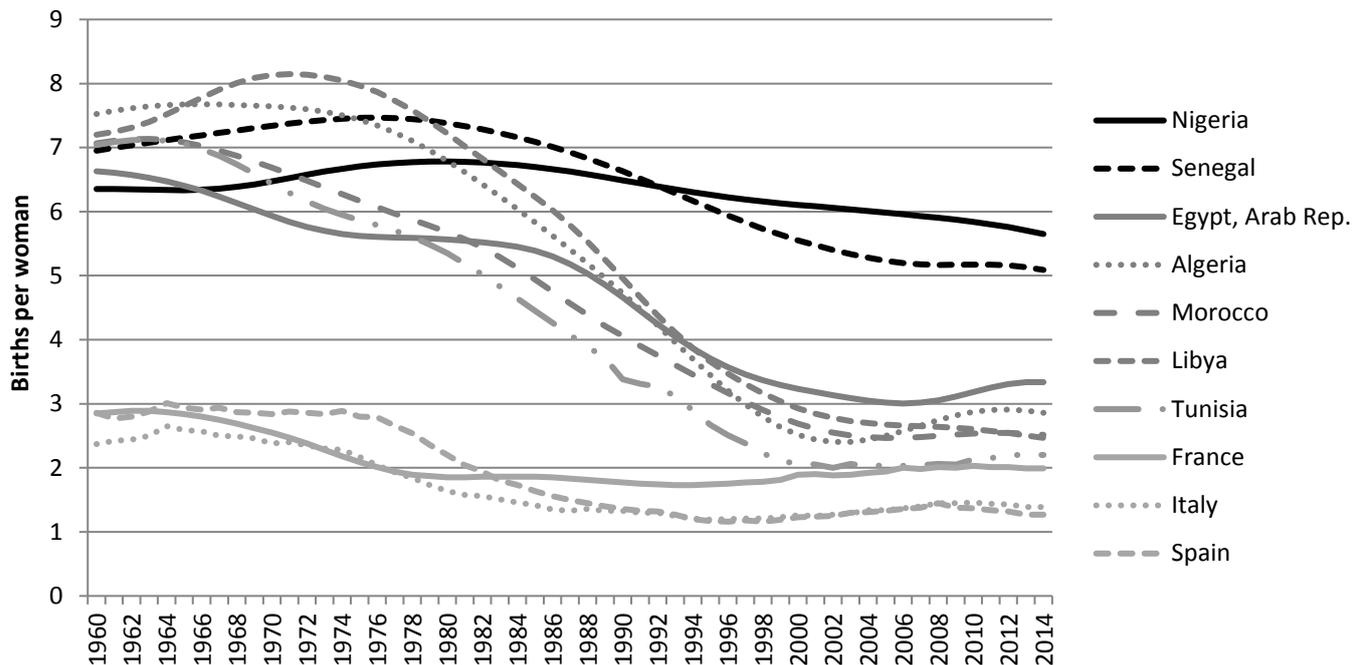
The GMF Scenario Methodology not only draws on existing theories and data, but also generates its own form of data through the identification of megatrends, relative certainties and uncertainties and ultimately the novel ideas about future trends developed within the scenarios.

Scenario workshops started with our own analyses of major demographic, technological and economic trends over the past decades and their potential evolution in the future. In addition to migration flows and stocks, we explored demographic transitions and population ageing using data on fertility and mortality (e.g. Figure 2), life expectancy at birth, population growth, population aged 15–24, and total dependency ratios. To understand health levels we reviewed infant mortality rates and for urbanisation and economic growth we analysed data on levels of urbanisation, GDP per capita and economic diversification. We examined data on education levels, literacy rates, school enrolment, and ratio of literate females to males to assess educational trends. Levels of communication and transportation technology were reviewed by looking at factors such as number of internet users, mobile cellular subscriptions, research and development expenditure (as percentage of GDP) and air passenger trends.

By comparing countries and observing change over time, we became aware of the ranges within which future change can be expected (Börjeson et al., 2006). For certain demographic trends in which the future is relatively certain (or at least less uncertain than other factors), such as population ageing and youth bulges, medium projection data were used to show the evolution of trends until the project's 2030 time horizon (e.g. Figure 3). The act of presenting these data stimulated discussions, as graphical data displays can often upset very common but inaccurate assumptions. For instance, the awareness that fertility levels in North African countries and Turkey are rapidly decreasing came as an epiphany for many participants, and led them to question the assumption that these countries will inevitably continue to 'produce' emigrants (Figure 7). Similarly, by looking at growth rates of GDP purchasing power parity per capita of European, African and the Pacific countries over the past decades, it is relatively certain that the majority of developing countries will be unable to grow to the level of developed countries over the next 20 years (Figure 8).

¹³ For a full description of megatrends, relative certainties and relative uncertainties, see the project report, *Global Migration Futures - Europe and North Africa: Drivers, Processes, and Future Regional Scenarios of Migration* (2017 forthcoming). Moreover, for this information and scenarios for the Horn of Africa and Yemen and the Pacific region, see respectively <http://www.imi.ox.ac.uk/pdfs/research-projects-pdfs/gmf-pdfs/global-migration-futures-using-scenarios-to-explore-future-migration-in-the-horn-of-africa-yemen> and <http://www.imi.ox.ac.uk/pdfs/research-projects-pdfs/gmf-pdfs/global-migration-futures-pacific-region-final-report>

Figure 7 Fertility rate, total (births per woman) in Algeria, Egypt, France, Italy, Libya, Morocco, Nigeria, Senegal, Spain and Tunisia

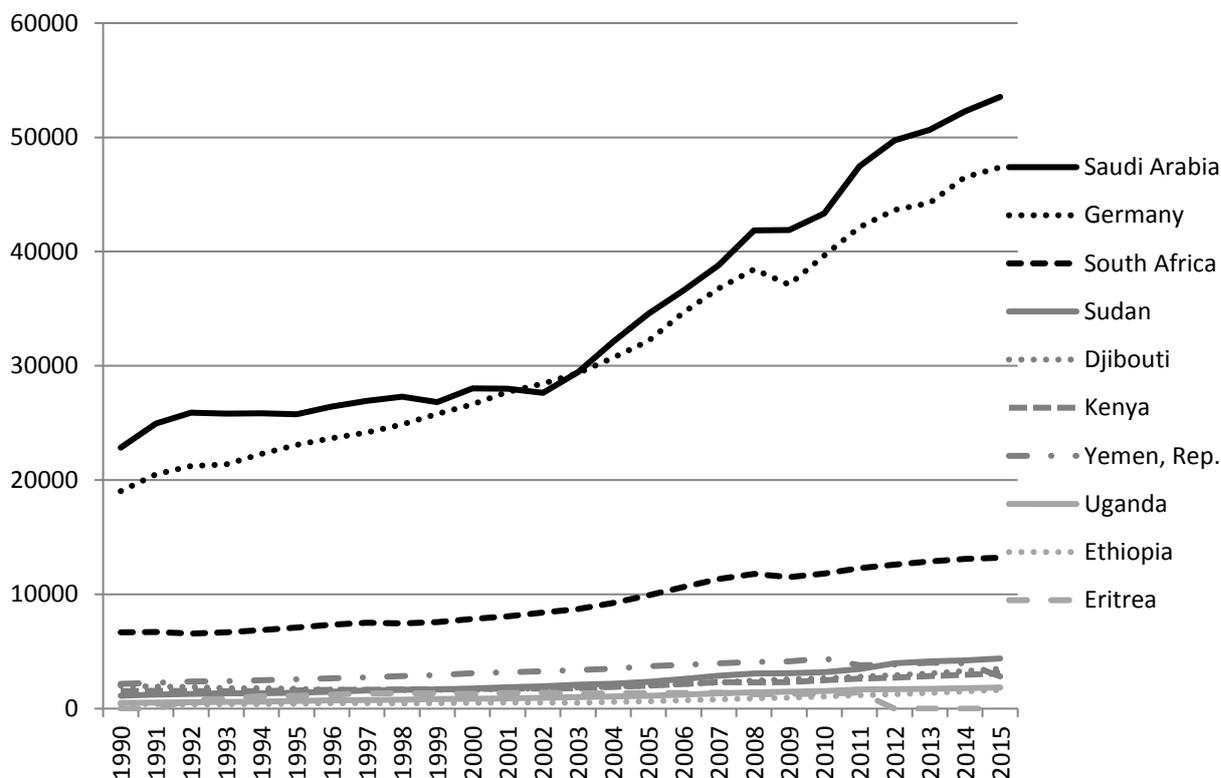


Source: World Bank, World Development Indicators¹⁴

Likewise, the analysis of migrant stock and migration flow data confirm that major economic shocks and geopolitical shifts such as the 1973 Oil Crisis, the fall of the Berlin Wall in 1989 and the 2008 Global Economic Crisis significantly affect migration patterns. At the same time the historical comparison of such crises also uncovered some clear regularities, pointing to the danger of overestimating their immediate effects. For instance, although the 1973 and 2008 economic shocks caused a slowdown of labour migration to northwestern Europe, no mass return from Europe to origin countries occurred as some predicted in the wake of both crises, and many basic migration patterns remained relatively unaffected, suggesting a higher than assumed structural stability in migration patterns, which can be partly explained through the migration-facilitating effects of migrant networks, which only weaken in the longer term (cf. Czaika and Haas, 2016). Real ‘migration game changers’, such as the post-WWII decolonisation, are historically much more rare, and we should therefore be careful not to ‘magnify’ the size and effects of the latest so-called ‘migration crisis’ in Europe and to properly assess its nature and likely effects.

¹⁴ Data extracted on January 20, 2017, available at <http://databank.worldbank.org/data/reports.aspx?source=2&series=SP.DYN.TFRT.IN&country=#>

Figure 8 GDP per capita, PPP (current international dollar) for countries in the Horn of Africa, Yemen, South Africa, Germany and Saudi Arabia



Source: World Bank, World Development Indicators¹⁵

6 Cautionary notes

It is important to mention a number of potential pitfalls in applying the GMF Scenario Methodology. To generate valuable outputs, the methodology relies on the right mix of conditions. We have identified five key areas that potential adopters should consider: (i) the context of scenario work, (ii) participants' characteristics, (iii) participants' commitment and expectations, (iv) value of the output and (v) logistics.

First, scenarios will inevitably reflect the socio-historical settings and the background of participants as well as the research team. While participants are asked to become aware of and/or be explicit about their own biases and try to break out of them throughout the scenario building process, research shows that for many people it is difficult to acknowledge such biases. Martelli (2001) indicated that ideological or cultural norms may in fact prevent the adoption of 'scenario thinking'. Hence, the more participants and the research team can acknowledge their own contexts, perceptions, and assumptions, the more effective the scenarios will be as tools for learning.

Second, the participants' expertise, self-reflection abilities, broad-mindedness and openness to experiment with new methodological tools can 'make or break' a scenario building workshop. As a person's field or area of expertise is less difficult to identify than whether he or she will be adept at

¹⁵ Available from: <http://databank.worldbank.org/data/reports.aspx?source=2&series=SP.DYN.TFRT.IN&country=#>, data extracted on 20 January 2017

thinking about future uncertainties (Martelli 2001), great efforts are made to ensure that participants have a willingness to and an interest in participating in a process that challenges their views. We have found that interviewing participants prior to the workshops is a good method of selection. When time and cost constraints prevent such interviews, online surveys may also be used. Most importantly, we have relied on partner institutions to help identify experts and stakeholders within their regions.

Third, a mismatch may arise between participants' expectations and the exploratory objective of the scenarios and between the time necessary for the scenario workshop and the time constraints most participants face. Participants should be aware that the methodology differs fundamentally from more conventional statistical or probabilistic methods and that the goal is to create tools that reveal multiple future 'possibilities' instead of one forecast and that scenarios foster preparedness about what 'is likely to' happen. For some participants, the creative elements of the scenario process may be difficult to accept, perhaps because the scenario building workshops generate qualitative data, and perhaps because results and insights emerge incrementally and the value of creative thinking is not exposed until scenario narratives are written. Moreover, scenario work is a learning process that works through repeatedly questioning conventional knowledge. This may generate feelings of discomfort, vulnerability and frustration. Participants must also be mindful of the multi-day time commitment required by the scenario building workshop, but also in online debriefings and iterations during later phases of the project. This may be discouraging for some participants, particularly those with very demanding jobs, such as in government or the private sector.

Fourth, communicating the value of the finished scenario narratives has proven challenging. Lacking any experience with the scenario methodology, 'consumers' (or external readers) of scenarios may focus on their perceived weaknesses. For instance, criticisms include the difficulties in checking for validity and the robustness of scenario narratives and the lack of a 'peer review' system for verifying the validity of the output (Martelli, 2001). For scenarios to be accepted, they must be credible in terms of who created them, their content, who is presenting them and how they are presented (Schoemaker, 1993). As scenario-based research becomes more widely accepted as scholarly research (Ramirez et al., 2015), scenario users may become more open to scenarios as a basis for brainstorming, generating new knowledge and research questions, and possible decision making. In the meantime, it is essential for scenario consumers to understand that scenarios are not projections and should not be used as a political instrument or a 'prescription' for policy building; but rather as awareness-raising tools and a scientific way of thinking about the future.

Lastly, the scenario methodology entails significant logistical requirements and the allocation of financial resources, organisational support and time. If one is to carry out a migration scenario building project, one must be in the region of interest or work with regional experts. Additionally, for the research team, it is essential to develop expertise in existing scenario building methodologies to adapt it for migration futures research and to facilitate scenario building workshops.

7 Conclusion

The GMF Scenario Methodology teaches us that the future should always be imagined in challenging and creative ways, as maintenance of the *status quo* is the least likely future. Moreover, the methodology encourages us to envision alternative migration futures by imagining different types of regional and global futures and to explore our assumptions, relative uncertainties, megatrends and relative certainties. While megatrends and relative certainties form the building blocks upon which we can imagine future developments, the true innovation of the GMF Scenario Methodology is its focus on relative uncertainties. This goes squarely against common methods of forecasting, which focus on relatively certain factors and which ignore crucial economic, political, and other factors that significantly impact on migration but are impossible to forecast. Relative uncertainties remind us that multiple future outcomes are possible and that we must pay careful attention to interaction effects. Key relative uncertainties that have the potential to significantly impact future migration, identified by the GMF project, relate to geopolitics, energy, xenophobia, technological advancements in robotics and production support as well as the future structure of labour markets.

Additionally, scenarios are valuable educational tools which have helped participants of the GMF project to imagine, anticipate and prepare for uncertain future events and to think about migration futures in a more creative and ‘flexible’ way. Following the close of the project, various participants reported back to us on the ways in which the scenario building process, as well as the insights gained from the scenarios themselves, had benefited their work. For instance, participants valued being exposed to different stakeholder perspectives and forging links with experts and stakeholders working in different sectors, developing a deeper understanding of direct and indirect migration determinants, and engaging in exercises that challenged their own perceptions of reality and the extent of potential future change.

The broadening of participants’ and the research team’s thinking about migration futures is another central benefit of the GMF Scenario Methodology. This shows the ability of the scenario methodology to turn ‘mere information into knowledge’ (Wright, 2000), and to use it as a tool to improve our understanding of rapidly changing societies and to develop ideas about their future evolution that are accessible to broad audiences.

8 References

- Alvesson, M. and Sandberg, J. (2011) 'Generating research questions through problematization'. *The Academy of Management Review*, 36(2): 247–71.
- Amer, M., Daim, T. U. and Jetter, A. (2013) 'A review of scenario planning'. *Futures*, 46(0): 23–40.
- Barbieri Masini, E. and Medina Vasquez, J. (2000) 'Scenarios as Seen from a Human and Social Perspective'. *Technological Forecasting and Social Change*, 65(1): 49–66.
- Bauer, T. and Zimmermann, K. F. (1999) 'Assessment of possible migration pressure and its labour market impact following EU enlargement to Central and Eastern Europe'. Bonn: IZA Bonn.
- Bijak, J. (2006) 'Forecasting International Migration: Selected Theories, Models, and Methods'. *CEFMR Working Paper*. Warsaw: Central European Forum for Migration Research.
- Bijak, J., Kicing, A., Kupiszewska, D. and Kupiszewski, M. (2008) 'Long-term international migration scenarios for Europe, 2002–2052'. In: Bonifazi, C., Okolski, M., Schoorl, J. and Patrick, S. (eds.) *International Migration in Europe: New Trends and New Methods of Analysis*, Amsterdam: Amsterdam University Press: 129–151.
- Bijak, J., Kupiszewska, D., Kupiszewski, M., Saczuk, K. and Kicing, A. (2007) 'Population and labour force projections for 27 European countries, 2002–2052: Impact of international migration on population ageing'. *European Journal of Population/Revue Européenne de Démographie*, 23(1): 1–31.
- Bodomo, A. B. and Ma, G. (2010) 'From Guangzhou to Yiwu: Emerging facets of the African Diaspora in China'. *International Journal of African Renaissance Studies - Multi-, Inter- and Transdisciplinarity*, 5(2): 283–89.
- Börjeson, L., Höjer, M., Dreborg, K.-H., Ekvall, T. and Finnveden, G. (2006) 'Scenario types and techniques: Towards a user's guide'. *Futures*, 38(7): 723–39.
- Bradfield, R., Wright, G., Burt, G., Cairns, G. and Van Der Heijden, K. (2005) 'The origins and evolution of scenario techniques in long range business planning'. *Futures*, 37(8): 795–812.
- Castles, S., de Haas, H. and Miller, M. J. (2014) *The Age of Migration: International Population Movements in the Modern World*. Houndmills, Basingstoke, Hampshire and London: Macmillan.
- Ceccagno, A. (2003) 'New Chinese migrants in Italy'. *International Migration*, 41(3): 187–213.
- Charova, K., Schaeffer, C. and Garron, L. (2011) *Computer and robots: Decision-makers in an automated world*. Available from: <https://cs.stanford.edu/people/eroberts/cs201/projects/2010-11/ComputersMakingDecisions/index.html> [Accessed 2 December 2016].
- Copenhagen Institute for Futures Studies (2008) 'Strategic futures studies'. Copenhagen: Copenhagen Institute for Futures Studies (CIFS).
- Crawford, M. (2014) *Lockheed Launches 3D Printing into Space*. Available from: <https://www.asme.org/engineering-topics/articles/manufacturing-processing/lockheed-launches-3d-printing-into-space> [Accessed 2 December 2016].
- Czaika, M. and de Haas, H. (2013a) 'The Globalisation of Migration: Has the world really become more migratory?' *DEMIG Working Paper*, 14. Oxford: International Migration Institute, University of Oxford.
- Czaika, M. and de Haas, H. (2013b) 'The Effectiveness of Immigration Policies'. *Population and Development Review*, 39(3): 487–508.

- Czaika, M. and de Haas, H. (2016) 'The effect of visas on migration processes'. *International Migration Review*. DOI: 10.1111/imre.12261
- de Haas, H. (2009) *Mobility and Human Development*. New York: UNDP.
- de Haas, H. (2010a) 'Migration transitions: a theoretical and empirical inquiry into the developmental drivers of international migration'. *DEMIG Working Paper*, 24. Oxford: International Migration Institute, University of Oxford.
- de Haas, H. (2010b) 'The internal dynamics of migration processes: A theoretical inquiry'. *Journal of Ethnic and Migration Studies*, 36(10): 1587–617.
- de Haas, H., Natter, K. and Vezzoli, S. (2016) 'Growing restrictiveness or changing selection? The nature and evolution of migration policies'. *International Migration Review*. DOI: 10.1111/imre.12288
- de Haas, H., Vargas-Silva, C. and Vezzoli, S. (2010) 'Global Migration Futures: A conceptual and methodological framework for research and analysis'. Oxford: International Migration Institute, University of Oxford.
- Dustmann, C., Casanova, M., Preston, I., Fertig, M. and Schmidt, C. M. (2003) 'The Impact of EU Enlargement on Migration Flows'. Home Office Online Report 25/03.
- Fertig, M. and Schmidt, C. (2000) 'Aggregate-Level Migration Studies as a Tool for Forecasting Future Migration Streams'. *IZA Discussion Paper*. Bonn: The Institute for the Study of Labor (IZA).
- Foresight. (2011) 'Foresight: Migration and Global Environmental Change'. London: UK Government Office for Science.
- Giubilaro, D. (1997) 'Migration from the Maghreb and migration pressures: Current situation and future prospects'. Geneva: Migration Branch, International Labour Organization.
- Hars, A. (2017) *Driverless car market watch: gearing up to save lives, reduce costs, resource consumption*. Available from: www.driverless-future.com [Accessed 2 December 2016].
- Hatton, T. J. and Williamson, J. G. (1998) *The Age of Mass Migration: Causes and Economic Impact*. New York: Oxford University Press.
- IMI (2006) 'Towards a New Agenda for International Migration Research'. Oxford: International Migration Institute, University of Oxford.
- IMI (2011a) *Testing Scenarios with Online Stakeholders*, IMI Policy Briefing Series 6. Available from: <https://www.imi.ox.ac.uk/publications/pb-06-11> [Accessed 18 April 2017].
- IMI (2011b) *Global Migration Futures Project: Third Stakeholders Workshop, The Azores*. Available from: <https://www.imi.ox.ac.uk/news/new-2-page-briefing-on-global-migration-futures-workshop/global-migration-futures-workshop-azores-2011.pdf> [Accessed 18 April 2017].
- IMI (2012) *Conceptualising Environmental Change and Global Migration Futures: Global Migration Futures Project Expert Workshop*. Available from: <https://www.imi.ox.ac.uk/events/gmf-env-change/env-ch-gmf-report.pdf> [Accessed 18 April 2017].
- IMI (2017 forthcoming) 'Global Migration Futures - Europe and North Africa: Drivers, Processes, and Future Regional Scenarios of Migration'. Oxford: International Migration Institute, University of Oxford.
- IMI and Regional Mixed Migration Secretariat (2012) 'Global Migration Futures: Using scenarios to explore future migration in the Horn of Africa and Yemen'. Oxford: International Migration Institute, University of Oxford.

- IMI and National Institute of Demographic and Economic Analysis University of Waikato (2013) 'Global Migration Futures - Pacific Region: Drivers, Processes and Future Scenarios of Migration'. Oxford: International Migration Institute, University of Oxford.
- Kaczmarczyk, P. and Okolski, M. (2005) 'International Migration in Central and Eastern Europe: Current and Future Trends'. In: *United Nations Expert Group Meeting on International Migration and Development*. New York.
- Khan, H. T. A. and Lutz, W. (2007) 'How well did past UN Population Projections anticipate demographic trends in six Southeast Asian countries?' *Oxford Institute of Population Ageing Working Paper*, 507. Oxford: Oxford Institute of Population Ageing, University of Oxford.
- Li, Z., Ma, L. J. C. and Xue, D. (2009) 'An African Enclave in China: The Making of a New Transnational Urban Space'. *Eurasian Geography and Economics*, 50(6): 699–719.
- Lutz, W. and Goldstein, J. R. (2004) 'Introduction: How to Deal with Uncertainty in Population Forecasting?' *International Statistical Review*, 72(1): 1–4.
- Lutz, W., Sanderson, W. and Scherbov, S. (2008) 'The coming acceleration of global population ageing'. *Nature*, 451(7179): 716–19.
- Martelli, A. (2001) 'Scenario building and scenario planning: State of the art and prospects of evolution'. *Futures Research Quarterly* (Summer).
- Massey, D. S. (1999) 'International Migration at the Dawn of the Twenty-First Century: The Role of the State'. *Population and Development Review*, 25(2): 303–22.
- Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. and Taylor, J. E. (1993) 'Theories of International Migration: A Review and Appraisal'. *Population and Development Review*, 19(3): 431–66.
- Mietzner, D. and Reger, G. (2005) 'Advantages and disadvantages of scenario approaches for strategic foresight'. *International Journal Technology Intelligence and Planning*, 5(2).
- Office for National Statistics (2011) 'Migration Statistics Quarterly Report, November 2011'. In *Statistical Bulletin*. Newport: ONS.
- Paoletti, E., de Haas, H. and Vargas-Silva, C. (2010) 'The concept and theory of migration scenarios'. Oxford: International Migration Institute, University of Oxford.
- Passel, J., Cohn, D. and Gonzalez-Barrera, A. (2013) 'Net migration from Mexico falls to zero—and perhaps less'. *Pew Research Centers Hispanic Trends Project*.
- Ramirez, R., Mukherjee, M., Vezzoli, S. and Kramer, A. M. (2015) 'Scenarios as a scholarly methodology to produce “interesting research”'. *Futures*, 71: 70–87.
- Schmidt, C. M. and Fertig, M. (2000) 'Aggregate-level migration studies as a tool for forecasting future migration streams'. *IZA Discussion Paper*, 183. Bonn: IZA.
- Schnaars, S. P. (1987) 'How to develop and use scenarios'. *Long Range Planning* 20(1): 105–14.
- Schoemaker, P. J. H. (1993) 'Multiple Scenario Development: its Conceptual and Behavioral Foundation'. *Strategic Management Journal*, 14: 193–213.
- Simmons, B. A. and Elkins, Z. (2004) 'The Globalization of Liberalization: Policy Diffusion in the International Political Economy'. *American Political Science Review*, 98(1): 171–89.

- Skeldon, R. (2012) 'Migration Transitions Revisited: Their Continued Relevance for The Development of Migration Theory'. *Population, Space and Place*, 18(2): 154–66.
- Van der Heijden, K. (2005) *Scenarios: The Art of Strategic Conversation*. West Sussex, England: John Wiley & Sons, Ltd.
- Van Hear, N. (2014) 'Reconsidering migration and class'. *International Migration Review*, 48(s1): S100-S21.
- Wack, P. (1985a) 'Scenarios - Shooting the Rapids'. *Harvard Business Review*, 63(6): 139–50.
- Wack, P. (1985b) 'Scenarios - Uncharted Waters Ahead'. *Harvard Business Review*, 63(5): 72–89.
- Wright, A. D. (2000) 'Scenario planning: a continuous improvement approach to strategy'. *Total Quality Management*, 11, Special Issue(4/5&6): S433-S38.
- Zelinsky, Z. (1971) 'The Hypothesis of the Mobility Transition'. *Geographical Review*, 61(2): 219–49.
- Zubrzycki, B. (2012) 'Recent African migration to South America: The case of Senegalese in Argentina'. *International Journal of Humanities and Social Science*, 2(22): 86–94.