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INNOVATION AT THE SERVICE OF THE PREVENTION OF AND ADAPTATION TO MIGRATION

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Among the 257 million migrants on the planet, in 2017 it is estimated that 66 million persons have been forcibly displaced¹. This number has steadily increased over the last decade and is mostly composed of people displaced in their own countries (40.3 million in 2016). The next big group (22.5 million) consists of refugees forced to flee their country (UNHCR, 2017). Stateless people are often forgotten but they also deserve attention. There are many causes for distress migration: besides conflicts and wars, the negative impacts of climate change, the degradation of the environment and the occurrence of natural hazards are laying their burden on peoples' livelihoods. It is important to realise that 84% of migrants are hosted by developing regions (UNHCR, 2017).

Box 1: Syrian Crisis: migration and refugees

Syrians currently represent the biggest population of forcibly displaced persons, reaching 12 million in 2016. Turkey, Jordan and Lebanon are the main destinations of Syrian refugees.

In 2017, there were 1 million officially registered Syrian refugees in Lebanon, officially estimated at 1.5 million. In comparison, the native Lebanese population is estimated at 4.3 million (UNHCR, 2017). Although Syrian migration to Lebanon is an old phenomenon, notably in the Northern districts of Bekaa and Akkar, the new influx of Syrian refugees has had destabilising effects: pressure on local resources like water and on the education and health systems have been high, whereas the abundance of cheap manpower, especially in low qualified jobs has provoked a decrease in salaries. The World Bank estimates that the Syrian refugee crisis has cost Lebanon 7.5 billion dollars so far. In Turkey, almost 90% of the current refugee population lives in urban areas and cities, of which 80% are below the poverty line (UNHCR, 2018a). It is hard to conceive how, when, and if the Syrian refugees will be able to come back to their country as long as the regime in Damascus keeps its present stance denying them any prospect of return.

¹ - We would like to thank Hedzer Roodenburg Vermaat of GreenfieldCities in Jordan for the work on the topic of sustainable refugee camps.

Migration often has a negative image. Indeed, migration leads to continuous distress, both in areas of origin and in host countries. Images of crowded, poor living conditions and even sometimes an inhumane reception of displaced persons, have too often dominated the news in the last decade. Europe has enhanced its pushback strategy, often resulting in irregular patterns, constantly changing routes, unfavourable humanitarian conditions and risky journeys (UNHCR, 2018b).

There is a need for international, regional and local governments to re-think policies, programmes, spatial and social planning. The UN pleads for a clear focus on facilitating safe, orderly and regular migration, enabling beneficial impact of migration for migrants and countries, for communities of destination and of origin (UN, 2017). To reach this objective, inclusive and comprehensive strategies are of utmost importance. The primary challenge for governments in the development of such inclusive and comprehensive strategies is to gain full understanding of the different forms of mobility, the complexity of interlinkages and spatial dispersion. These comprehensive strategies consist of innovative social and technical interventions and new modes of governance in response to the challenges and the specific context.

Innovation theories can contribute to improving the practice of migration prevention and adaptation today. Given existing institutions and sensitivities in the migration debate, the use of innovation to facilitate change is a core challenge. We argue that when rethinking their policies, local, national and international authorities should begin with considering the realities, strengths and practices of the people as well as social innovation. This concept can be described as “changes of attitudes, behaviour or perceptions of a group of people joined in a network of aligned interests that, in relation to the group’s horizon of experiences, lead to new and improved ways of collaborative action within the group and beyond” (Neumeier, 2016).

Social innovation fully depends on actions at individual level, when enablers perform to realise change by means of network interactions and activities (ibid). Social innovation helps the development of new institutional structures, for instance network structures that can deal with the particular needs for change to accomplish intended societal impacts.

However, this does not stop at the social level. Susan Baker and Abid Mehmood (2015) argue that social innovation is closely linked to its surroundings. Not only will institutional settings in terms of scale, scope and resonance be impacted, but also the environment, including, economical, technical and ecological conditions, Social innovation is therefore inherently inducing socio-technical change. They insist that long-term well-being is context dependent, and contexts consist of both built and natural environments.

We argue that a core cause to the present migration crisis and a core part of the solutions to this crisis must be sought in the link between the socio-economic conditions, technical infrastructure and ecological basis of localities. Innovative approaches to deal with migration cover all these aspects of the solutions.

Prevention of distress migration

Causes of migration

Even if distress migration has its roots in the local contexts where migrants come from, there is no doubt that national policies are also an important factor. All the ingredients for a sound national policy environment are well known: promotion of investments and growth geared towards developing economic opportunities, decent employment, which often comes hand in hand with the development of the formal sector; promotion of gender equity to promote fairness of treatment for women and men alike and women emancipation; mass education linked to the needs of the economy; the establishment of efficient and fair social safety nets which preserve the dignity of beneficiaries while encouraging their reintegration in economic and social circles; investments in infrastructures in order to establish links between regions and people, facilitate economic flows and improve living conditions across the whole national territory, unlocking the potential of even the remotest parts of the country; implementation of vigorous measures to protect the environment and natural resources which represent the life base of the poorest segments of the population, especially in rural areas.

These components of a sound national policy context are well known. Nevertheless, they are seldom put into place in a way that is effective enough to provide hope to the marginalised, unemployed or underemployed, to the steady flow of youth reaching the labour market, to women trapped in unfair situations and subject to discrimination, thus incapacitating economic and social settings. In Sub-Saharan Africa, unemployment among young people aged 15-24 years has reached 14% in 2017, and it culminates at 28% for the same year in North Africa and the Middle East (ILO, 2017). This data does not include youth in vulnerable employment and underemployed in informal sectors, who make up at least 70% of the workforce. The situation in Africa is compounded by the fact that the youth population is expected to double reaching over 400 million people by 2045. In 2017, the female unemployment rate was estimated at 8% in Sub-Saharan Africa and 18% in North Africa and the Middle East when the world average is at 6% (ILO, 2017). Such figures do not capture the qualitative bias against female employment where low paid, low quality jobs prevail.

The perceived lack of opportunities for people to maintain or improve their livelihoods results in an absence of hope for a better future, particularly affecting the younger generations in countries where decent employment is rare and demand for it is huge. As it is widely recognised, high unemployment rates among the youth, even when they have obtained a higher education diploma, is a major cause for migration. A decent job is a necessity for keeping one's self esteem and dignity. Indeed, alongside bread and freedom, the demand for dignity (*karama* in Arabic) regularly figures at the centre of aspirations, especially among youth, in the various social movements that have recently affected the countries of the southern Mediterranean shores.

Box 2: Drivers of migration according to the UN

“Economic opportunities, demographics, and poverty/food insecurity are prime influencers in the migration decision-making process and inter-act to greater or lesser degrees, depending on the specific context, to drive migration. The search for livelihoods and economic opportunities, whether out of choice or necessity, are decisive factors for many in migration decision-making. However, due to the cost of migration, the ‘poorest of the poor’, and particularly the less skilled, are often unable to migrate, either domestically or across borders, and may be less able than other migrants to access regular channels of migration” (UN, 2017).

It is also important to assess the possible effects of environmental change including land degradation, slow-onset climate change or sudden events, on these prime influencers. For instance, climate change leads to changing rain patterns, resulting in water shortages in some places and flooding in others. Long periods of drought result in food shortages on the short term and impoverishment of smallholder farming families on the mid-term. This can make vulnerable communities highly prone to mass migration, especially when they are already faced with conflicts, human insecurity or poverty. The focus on environmental issues and livelihood opportunities is more common in relation to areas of origin. Often, environmental issues and livelihood perspectives play a secondary role in interventions at sites of transit and destination (UN, 2017; Rooij *et al.*, 2016) when they should play a significant role in coping with existing and future challenges at sites of transit and destination.

The challenge is therefore to formulate innovative solutions providing people with an answer to mass migration and to develop secure livelihoods for all. This could only be achieved if different stakeholders join forces. Communities worldwide need to mobilise themselves to struggle for access to freshwater, energy and food to sustain their livelihoods. Governments, local authorities need to work in close collaboration with NGO’s, communities and businesses to develop solutions.

An integrated approach to deal with the root causes of migration

An integrated approach to design and the implementation of solutions to increase livelihood security are required. Among recent changes in the governance of southern Mediterranean and African countries, a shift towards decentralisation is at work. By allowing decision-makers to get closer to the population and by facilitating the participation of the people in the decision-making process, decentralisation appears to be a powerful tool in view of restoring a sense of meaning and hope among potential candidates to migration.

In Morocco for instance, a country with a strong tradition of royal central authority, a series of laws promulgated in 2015 have clarified the competencies and the status of elected councils at regional, provincial and communal levels². The challenge is

2 - Kingdom of Morocco, Ministry of the Interior, National portal of local authorities, “Processus de decentralisation” (www.pncl.gov.ma/fr/Decentralisation/Pages/Processus-de-décentralisation.aspx).

now to implement new mechanisms of coordination among government services at local level, and between those services, elected local representatives, business, and civil society.

Box 3: The ENPARD South Regional Initiative

Funded by the DG NEAR of the European Commission and co-ordinated by the CIHEAM Mediterranean Agronomic Institute of Montpellier, the ENPARD South Regional Initiative launched in 2011 is an attempt to foster bilateral and regional dialogue among the EU and countries of the Southern Neighbourhood (SN) in the field of agricultural and rural policies.

Exchanges of best practices related to priority topics of agricultural and rural development policies have been taking place, allowing countries of the SN to mutually benefit from their experiences through national, sub-regional and regional activities. Topics like farmers' organisations, the sustainable mobilisation of local resources, the promotion of rural employment, enhancement of the quality of agricultural products for a better access to domestic and foreign markets, emerged as major areas for better policy coherence.

The ENPARD-South Initiative was implemented in a context where migration flows from rural areas increased rapidly and coincided in many countries with renewed efforts towards strengthening governance and participation of stakeholders at local level. In particular, the implementation of decentralisation policies has shown the urgent need for a better coordination of government agencies, as well as for capacity strengthening of local governments. However, it is also starting to show that unleashing the potential of citizens and their organisations is a necessary step towards the recovery of their sense of dignity.

Source: ENPARD South Regional Initiative (www.enpardmed.org).

In Tunisia, decentralisation is an outcome of the 2011 Revolution that rejected a regime of authority and control over national resources. The new Constitution of 2014 lays down the competencies and duties of local governments³. The municipal elections of May 2018 could be the cornerstone of the decentralisation process, provided that sufficient financial and human resources are made available to the municipalities in order to allow them to perform their new responsibilities. Field experience in Tunisia shows that unlocking local potential for rapid job creation is possible, especially in the agro-food sector, which is predominant in rural areas, even without massive new investment flows, by implementing innovative and inclusive approaches. To this effect, private enterprises have a crucial role to play in strengthening the formal economy and providing rural populations with decent jobs. Examples show that it is possible for SMEs to thrive in rural areas provided their efforts are supported by sound policies and a benevolent attitude of governments at central and local levels. Such arrangements could go a long way to prevent distress migrations resulting from a sense of abandonment of the local populations in remote areas.

3 - European Committee of the Regions, Tunisia: technical sheet, "Répartition verticale des compétences" (https://portal.cor.europa.eu/arlem/Documents/Tunisia%20Fact%20Sheet%20No%201%20FR%20_%208%20May%202014.pdf).

Box 4: “Emploi Sud”, an EU-funded job generation project in South Tunisia

Funded by the EU delegation in Tunis, the “Emploi Sud” project is implemented under the co-ordination of the CIHEAM Mediterranean Agronomic Institute of Montpellier. The project is aimed at fostering employment and job creation in agriculture and the development of rural activities in the governorate of Medenine by facilitating new types of relations between government agencies at local level and actors of the private sector and civil society. The implementation of the project showed that, even in remote, depressed rural areas, it is possible to unlock local entrepreneurial energies and employment potential by changing the way economic actors and government services interact. Capacity building and training programmes tailored to the needs expressed by farmers, co-operative managers or other economic agents have been successfully delivered, resulting in improving their economic efficiency. Confidence building and better interaction between local representatives of the Ministry of Agriculture and co-operatives have boosted the establishment of young farmers and enhanced local production in terms of quantity and quality (e.g. olive oil, honey, handicrafts and sheep breeding). Partnership agreements with local banks have resulted in the upgrading of agro industrial equipment of SMEs. Support to marketing, related to the improvement of the quality of products has led to the identification of new, lucrative outlets in the country (Djerba, Tunis) resulting in the improvement of the revenue of both farms and SMEs. Agricultural co-operatives were strengthened and their membership consolidated as farmers benefited from new activities. One of the most interesting impacts of the project is the fact that SMEs proved ready to join the formal sector as a condition for benefiting from official procurement. The Tunisian Ministry of Agriculture showed strong interest in broadening the approach of the project to include other rural governorates.

In order to tackle the root causes of migration, socio-economic baseline studies can be combined with the use of advanced technology tools based on earth observation, climate models and spatial big data to forecast crop yields, identify critical climate hotspots now and in the future, and assess the impact on food production capacities. In doing so, it is important to take all drivers in account (economic, political, social, demographic and environmental), and especially, the interaction of these drivers (Black *et al.*, 2011). Consequently there are many practical innovative solutions to mass migration, both in rural areas with sustainable land use solutions, and in metropolitan areas with nature based solutions for climate adaptation (See for instance the “plan intégré paysan” approach [PIP] or the Sketch’n Match approach used in many projects of the Wageningen University and Research Centre).

National policies and strategies for adaptation to migration

Migration as an adaptive solution to modern challenges

Whatever the efforts made in tackling the root causes of distress migration, there is no doubt about the fact that migratory fluxes are going to last under the effect of long term trends: demography, climate change and growing disparities between regions and countries as regards wealth and quality of life. When considering the

dramatic situations and suffering often endured by distress migrants, migration can also be regarded as an adaptation of the global society to such disparities.

International exchanges of goods have been liberalised in the global market in the framework of trade agreements and under the supervision of the World Trade Organisation (WTO). International movements of capital also have tremendously increased over the years, with the International Monetary Fund (IMF) setting rules in this regards. Liberal economists argue that for economic globalisation to be really effective, it is necessary that labour and manpower are also free to move so that all production factors are employed in an optimal manner.

From this point of view, migration can be seen as a global optimisation process, although no international body is mandated to supervise it with recognised powers to enforce basic rules of good conduct (like the WTO or IMF in their fields). Big progress in tackling the most problematic aspects of migration could be achieved if such an international body is established, maybe by giving the International Labour Organisation or an affiliated body, the power to enforce rules providing a framework for the actions of States and other constituencies.

However, for the moment, individual nations (and the EU as a group of nations) are left isolated to design strategies, policies and programmes aimed at enabling safe and regular migration so that the beneficial impact of migration is maximised for migrants as well as the countries and communities of destination and of origin (UN, 2017).

Guiding principles

The Council of Europe has set guiding principles for sound national strategies and policies to handle migration influx⁴. They have been developed targeting OECD host countries, but since they are based on a Human Rights approach, they can be considered as universal. These principles are:

- Equality of treatment and non-discrimination;
- Respect of cultural, religious and language diversity;
- Positive communication on migrants through the media;
- Legal framework for the integration of migrants in the job market;
- Education and language training, especially for the second generation;
- Housing and urban planning to combat discrimination;
- Ensuring access of migrants to health and social security;
- Encouraging participation and engagement of migrants in civil life.

Although such guiding principles are widely known and accepted, there is still a long way to go towards their full implementation. This state of affairs is due to a set of complex causes among which the political dimension is of paramount importance, as political parties do not always contribute to an informed and objective societal

4 - Council of Europe, *Economic Migration, Social Cohesion and Development: Towards an Integrated Approach*, Proceedings of the 8th Conference of the Ministers in charge of migration issues, Kiev, 4-5 September 2008, Chapter 3: "Migration and social cohesion" (www.coe.int/t/dg3/migration/archives/Ministerial_Conferences/8th%20conference//MMG8%20-%20thematic%20report_Chapter_III_en.pdf).

debate on migration. As a result, public perception of the positive contributions of migrants in their destination place is insufficient, whereas at the same time migrants are often tempted to remain locked within the limits of the social networks which they used in their migration process (family, persons from the same geographical origin), slowing down integration. It is nonetheless comforting to observe the development of numerous innovative initiatives aimed at smoothing out these difficulties, and often launched by civil society organisations.

Box 5: An initiative of the Young Foundation (UK)

Five migrant social enterprises have together won over £40,000 worth of business support from the Young Foundation – a leading centre for social enterprise – thanks to an initiative by the Metropolitan Migration Foundation to grow the number of migrant social entrepreneurs in Lambeth and Nottingham.

The five organisations sharing the £40,000 worth of support include a boxing academy that focuses on tackling anti-social behaviour in Nottingham and a low cost tutoring service in London bringing together university students from low-income backgrounds and primary school children in need of tutoring. The five winners, selected from over forty applicants from across the UK, have won procurement contracts with Metropolitan, one-to-one mentoring from Metropolitan staff, and the opportunity to showcase their work in a pop-up shop.

While the social enterprise sector is flourishing in the UK, there has been limited involvement from migrant, refugee and ethnic minorities to date. Lack of access to credit and funding alongside religious, gender and language barriers all contribute to the problem. To address this issue, the Metropolitan Migration Foundation and the Young Foundation created the Community Level Investment in Migrant Businesses programme (CLIMB). Twenty migrant entrepreneurs participated, receiving valuable support from the Young Foundation helping them to grow their venture, develop their business model, and communicate the value of their social impact.

Source: Young Foundation, “Five Migrant Social Enterprises Win over £40k of Business Support”, 23 May 2013 (https://youngfoundation.org/?press_releases=five-migrant-social-enterprises-win-over-40k-of-business-support).

Urban management

With up to 70% of the world’s population expected to be living in cities within the next few decades, cities have the challenge to become the main habitat of the human species. Even though 21st century cities continue to be engines for economic growth in a global economy, they often face a crisis in their inability to deal with the massive influx of people. In many of these cities, poverty is endemic and discontent and civil unrest could become a serious problem if the growth is not paralleled with a concomitant growth of the urban infrastructure (Clark, 2007). One of the biggest challenges for cities all over the world is thus to ensure that these urban habitats are safe, inclusive and provide a healthy environment that match with basic human needs and behaviour. As Winston Churchill stated: “We shape our environment, thereafter it shapes us”.

Urban and rural areas are interdependent in terms of developing safe habitats. Urban centres depend on rural areas for a range of goods and services, such as food, clean water, environmental services, and raw materials. Rural areas depend on urban areas for access to services, employment opportunities, and markets (UN, 2015). The peri-urban (or the urban fringe) becomes a new multifunctional territory with its own unique challenges, such as dealing with intense pressure on resources, like food, land and water and the supply of adequate services such as financial, technical, and staff resources. A transition is needed to improve the sustainability and resilience of these areas.

For the future it is important to invest in the development of sustainable cities and foster economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which human well-being relies. Migration and mobility should be fully integrated in development and urban planning and processes (WEF, 2017). Migration impacts the diversity of the city, which also brings opportunities in urban development. The influx could accelerate urban transformation and make full use of new social and economic potential, based on solidarities (WEF, 2017; Blocher, 2017). Cherishing diversity and heterogeneity is a key in sustainable city development, as well as full inclusion and understanding of the spatial and natural context.

Sustainable design principles can stimulate economic growth by allowing earning money, creating jobs, making products, providing food security without the over-exploitation of the natural resources in and around the area. Metropolitan solutions can offer design, planning and assessment tools as well as guidelines and concepts on how to apply the different aspects of urban resources effectively. Extracting and using raw materials has a big impact on natural capital and the earth's climate. Therefore, a transition from a linear economy where resources are used until they are discarded and disposed as waste, to a circular economy where the focus is on value retention and the re-use of resources is needed. Policy makers, companies and civil society organisations that aim to develop circular cities are faced with an increasing demand for knowledge on this topic.

Parallel to urban development, and considering the challenges of the sustainable growth of cities under demographic pressure, a reverse trend of population flow from big cities towards smaller towns and rural areas – the so called “counterurbanisation”, has been observed. Counterurbanisation has been well documented in developed countries, such as in the EU, Australia or Russia. The causes of this type of move are multiple and linked to individual preferences and behaviour. However structural causes have also been identified (see Geyer, 2015) such as the availability of transportation and communication technology, or the reduced cost of living and attractive property prices for both individuals and enterprises, especially in the services sector. The recent financial crisis in Greece provides a good example of counterurbanisation with significant parts of the population in cities returning to their family homes in rural areas. In line with these recent developments, it would be worth reflecting on the possibilities and advantages of accommodating migrants in small towns and rural areas of developed countries, especially where the rural/farming population is getting older and where the economic and social fabric is weakening. Such places are found in several

countries in Europe and elsewhere and would benefit in the longer term from a rejuvenation of their population, provided adequate measures are taken at the early stages of migration in order to favour a smooth integration of migrants.

In the developing world, counterurbanisation has been less researched but rural development studies suggest that it is a widespread phenomenon in numerous countries like South Africa, Zambia, the Ivory Coast and Burkina Faso (Geyer, 2015). In developing countries, counterurbanisation is often related to opportunities for production activities and job creation outside big cities (agriculture, agro-food industry, tourism, etc.). The growth of the tertiary (services), and quaternary (knowledge-based activities relying on information and communication technologies) sectors of the economy also provides incentives for counterurbanisation.

This dynamic can provide the framework for a better management of migratory flows within and between developing countries, which account for the bulk of migratory flows worldwide. Policies geared at favouring counterurbanisation, creating an enabling environment for the economic development of small towns and rural areas would naturally redirect significant flows of migrants outside overcrowded cities towards less congested areas. Such policies should ensure that counterurbanisation occurs while respecting the standards of sustainable development.

Innovation to improve the fate of refugees and their hosts

Sustainable settlements

When considering refugee camps and temporary settlements for distress migrants, a key issue is to embrace environmental concerns from the onset. In this respect, environmental concern “is not a luxury to be implemented only when more urgent matters are attended to...” (Wilkinson, 2002). When referring to serious harsh environmental conditions such as heat stress, dust problems, mud and flooding and poor public space in these host areas, Andrew Harper’s statement is clear: one must “contribute to a wider environmental strategy, rather than degrading it. The key to achieving this goal is to understand and support the inclusion of the issue of refugees in the national environmental policies formulated by host governments. We need to find ways to raise awareness on the fact that coordinated, serious actions to protect the environment provide win-win opportunities enabling to meet everyone’s needs at present and in the future. [...] thus linking environmental and energy issues with livelihoods and community resilience.”

While the emphasis is currently placed on establishing temporary solutions and discouraging permanent settlements, the fact is that in many host areas (and also host regions) these solutions last several years or even decades and are, despite international efforts, steadily growing in terms of size and population figures with severe impacts on regional sustainability: substantial land use changes with loss of natural and agricultural land; soil sealing and erosion; water consumption and pollution; greenhouse gas emissions due to traffic, supply logistics, heating and energy consumption; social isolation and conflicts due to high population density and lack

of open space; long and frequently instable food supply chains, food insecurity and food waste; deteriorating health, education and quality of life.

Box 6: Dadaab, Kenya: third-generation refugees born in the world's largest refugee camp

The year 2012 was the 20th anniversary of the world's biggest refugee camp: Dadaab in north-eastern Kenya. The UNHCR, set up the first camps in the Dadaab complex between October 1991 and June 1992 to host refugees fleeing the civil war in Somalia culminating with the fall of Mogadishu and the overthrow of the central government in 1991. The five Dadaab camps were originally intended to host up to 90,000 people. Today they host more than half a million refugees and asylum-seekers, including some 10,000 third-generation refugees born in Dadaab. Dadaab has been able to provide shelter for refugees for so many years due to the generosity and extensive efforts of the Government and the people of Kenya. Together with the Government of Kenya and aid agencies, UNHCR has provided protection, shelter and humanitarian assistance, often under difficult and complex circumstances. Chronic overcrowding, risk of disease, and seasonal floods are among the major challenges.

Source: UNHCR, Global Trends Forced Displacement in 2015, Geneva, United Nations High Commissioner for Refugees (UNHCR), 2015.

It is clear that the meaning and value of a constructive integrated approach with environmental measures, not only in terms of protection, could add value and improve the quality of life for refugees and their hosting communities. Innovative design and management of for instance refugee camps, but also host regions in general can help improve the living conditions of displaced people, lower management costs for the local institutions and organisations in charge, and leave a lasting positive impact for host communities. Nevertheless, the world is still struggling to address this correctly and open the way to actual (large scale) implementation.

This approach can embrace many aspects of metropolitan solutions:

- Creating liveable and healthy host regions by developing innovative approaches based on ecosystem functions that are linked with the overall landscape of the site;
- Developing climate-resilient host regions by making use of waste heat, non-fossil energy, LED-light systems, smart grid facilities and biomass-energy-technology, preferably by employing means of frugal innovation methods;
- Increasing the resource efficiency of host regions by making use of vertical (within sector) and horizontal integration (between sectors);
- Creating food secure host regions by developing sustainable and stable food chains, self-production and food processing units and providing access to agricultural land and effective distribution services;
- Introducing new forms of governance based on triple helix processes that include refugees, aid organisations and host country governments as well as business inside and outside the camps;
- Providing transparency by monitoring urban metabolism processes inside and outside the camp and by making data available for all partners.

Table 1 shows the practical implications of different measures that can be taken.

Table 1 - Measures to be taken for green host communities

Topic	Solutions	Benefits	Challenges
Greenery and heat stress	Trees alongside the road Rooftop gardens Little gardens next to tent/shelter/buildings	Reduce heat stress, insulation, filter air pollution, food production, rainfall retention, increase in health and wellbeing	Water management
Sanitation and water management	Communal sanitation facilities Grey water re-use Swales	Less complex, community involvement, use of waste, improved security and flexible Reduce health risks, can be used for vegetation and agriculture, sense of ownership, reduce heat stress Reduce flooding, rain water use, can be used for vegetation and agriculture, reduce heat stress	System maintenance and waste treatment by local community Local involvement and education Local involvement and education
Waste management	Compressed solid waste Plastic bottle bricks Liter of light	Easy, bio-degradable, earthquake resistant, deals with plastic waste Easy, strong, deals with plastic waste Easy, stimulated social entrepreneurship	Requires factory and knowledge Requires training Applicability
Sustainable energy	Smart grid Solar panels Bike creating energy Cooking stoves	Efficient transmission, relatively low costs, can integrate renewable energy, improved security Sustainable, short payback period, easily deconstructed and relocate No emission, independent of other factors – just needs one hour to cycle a day Energy efficient, easy, safe	Setting up the system Sharing energy Optimal usage and meeting demand Cycling in a warm climate and cultural appropriateness Cultural habits
Sustainable food systems	Vertical gardening Multi-story gardens Rooftop gardens	Food security, less dependency on outside assistance, helps with waste and water management, gardening activities, thermal benefit, water efficient	Water scarcity
Recreation	Recreational areas	Education, entertainment, reduce anti-social behaviour, learning environment, made out of waste	Land scarcity

Source: Huibers *et al.* (2016).

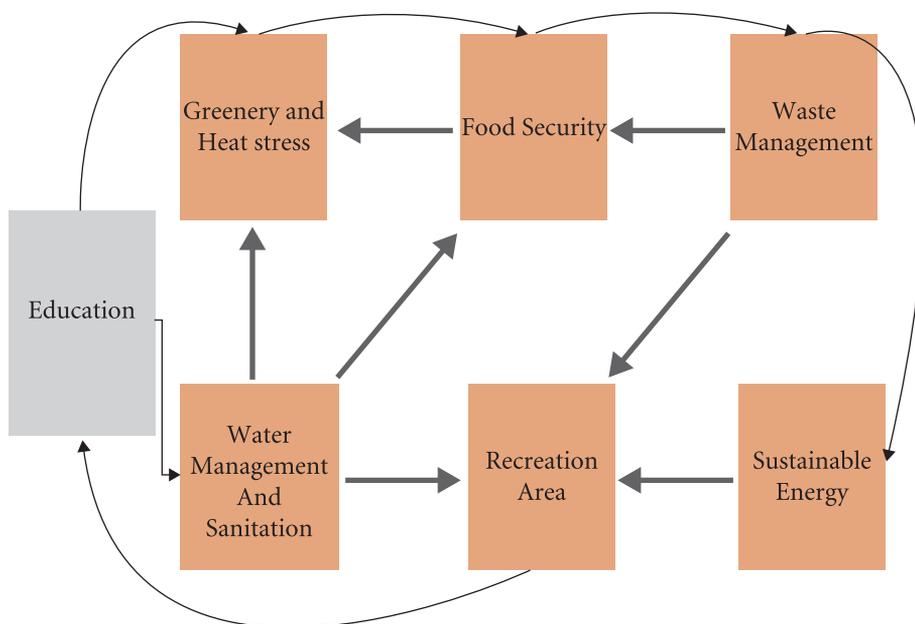
Green solutions focus on creating mutual benefits and establishing cooperation between the refugee community and the host communities in the fields of natural resource management and livelihood opportunities. Environmental, sustainable design principles and techniques are based on shared understanding, co-creation and co-ownership.

Opportunities to improve living conditions, livelihood and natural resource management should be considered not only in the area of host regions, but also in slums and urban areas under pressure. The main challenges are not so much about the availability of technical solutions and sustainable principles. Many of these, developed in common urban and rural settings, are easily adaptable to a variety of contexts. The key is to implement them through social innovation, new governance principles and full involvement and commitment of all stakeholders involved.

Improving education and wellbeing of refugees

Another essential need connected to all other measures (Figure 1), is to improve education and wellbeing of refugees on many aspects of living in their new situation. One way to do this is to invest in bottom-up projects.

Figure 1 - Interlinkage model of the metropolitan solutions for host regions



Source: Huibers *et al.*, 2016.

Box 7: Za'atari refugee camp in Jordan

The Za'atari refugee camp in Jordan where Syrian refugees have been hosted since 2012 is an interesting example. The UNHCR, the City of Amsterdam and VNG International have worked on the sustainable development of this camp. They focused on inclusive urban planning at camp level, community-based projects, with an emphasis on greenery, transportation and public recreational space. Created by Hedzer Roodenburg Vermaat in 2017, the project "Emerging Public Space" is aimed at the development of public space to increase self-reliance, enhance liveability and the wellbeing of the inhabitants. The project is highly community-driven, with a voluntary contribution, no fences or guards and started with small pilots. Different opportunities were designed together with the communities. One of the main lessons learned is that it is essential to invest in social innovation: enhancing the qualities of refugees, learning from refugees and migrants and making areas near conflict sustainable enough to avoid further migration.

Self-organisational structures and self-sufficiency can be considered as a way of helping refugees to take up responsibilities, develop new skills and knowhow, open up economic opportunities and even teach or educate other refugees. In this way, refugees are likely to be better prepared to leave camps or their host region, go back to their places of origin (if possible) and take up a life and a profession in non-camp situations. Linking these newly learned abilities to issues such as waste and water management, climate-smart food production and planning, non-fossil energy production and park/green space management for recreation and nature will make host regions more sustainable in an inclusive and innovative way.

Connectivity

Connectivity is a key value to migrants. The 2016 UNHCR report "Connecting refugees" shows that more and more refugees are connected thanks to the use of basic phones or smart phones (UNHCR, 2016), but not everyone has access. At international level, more efforts are made to improve connectivity, including between humanitarian agencies, between refugees, and between refugees and humanitarian agencies. Connectivity should be included in the mandate of one or more UN organisations. The international community aims at a fully digitalised humanitarian sector in the years to come. What will this look like? How will it work? How would such a situation deal with ensuring privacy on the one hand and the trend towards greater surveillance on the other hand?

Refugees are afraid that their communication may be used against them, either by authorities (from their country of origin, or from their destination-country) or by criminal organisations. They should have safe access to communication. The development of a system to achieve accessibility, reliability of communication and availability of data is required. There is a divide between the humanitarian sector that wants to increase accessibility, reliability and connectivity (taking privacy into account), and the cyber security sector that wants to monitor and restrict access for security reasons. There should be a debate between these sectors to create awareness and prevent the restriction of peoples' safety and connectivity due to technological measures.

Information and communications technology (ICT) alone will not make refugees and migrants more connected. Connectivity is always embedded in wider social networks and community relations. It is important to understand these dynamics and therefore to engage with different forms of communication and information techniques and dynamics (ICT-based, non-ICT-based).

Box 8: GreenfieldCities in the Netherlands

These lessons are at the basis of an interesting initiative called GreenfieldCities in Arnhem, the Netherlands, consisting in building new cities for the settlement of migrants based on sustainable principles. New strategically positioned and planned urban development is foreseen as a possible solution in the push-pull movement of migration. Most importantly, the organisation is using the specific knowledge available among migrants in the Netherlands. Valuing the skills and knowledge migrants bring to their host countries is an important key for the success of this initiative.

- 1) They hire refugees that have already arrived in Europe and ask them to help develop the plans for new cities.
- 2) Refugees receive high quality support from leading European institutions and companies to enhance their talents and skills. This propels refugees in Europe into good networks (jobs) and at the same time, it helps them create high-quality plans for their home region that fit the refugee's own culture and expectations.
- 3) The organisation works with host countries in the region.

Source: GreenfieldCities (www.greenfieldcities.org).

Re-investment and return to localities of origin

The impact of diasporas on the development of their localities of origin must not be underestimated. In 2017, remittance flows towards low and middle income countries have reached 450 billion dollars, of which 37.8 billion went to Sub-Saharan Africa and 51.2 billion to North Africa and the Middle East. This figure can be compared with the total Official Development Assistance (ODA) in the world, which amounted to 100 billion dollars in 2017 and to the total Foreign Direct Investments (FDI) of 530 billion dollars (World Bank, 2017). Remittances may have a limited impact on national economies, as they are mainly used for consumption purposes (housing, etc.) and not for investment, but locally, they often make a big difference for the sustenance of migrants' families who stayed in their country of origin. They contribute to local economies and livelihoods.

The amount of remittances could be even bigger if the cost of sending money was lower. The cost of remittances was estimated at over 7% in 2017, much higher than the objective of the SDG, fixed at 3% (World Bank, 2017). One of the main reasons explaining these high costs is the exclusivity of partnership given by the Post Office system in many countries to a single money transfer operator, limiting competition for this kind of service. Regulation against such exclusivities could contribute to increasing the flow of remittances.

Beyond remittances, some countries have tried to introduce financial innovations to tap the savings of the richest segments of their diasporas through the emission of “diaspora bonds”, often used in big national investment programmes. For instance, in 2011, Ethiopia has launched a “Renaissance Dam Bond” over a period of 10 years, which was rather successful among the Ethiopian diaspora. Morocco has established a very efficient banking network abroad to collect the savings of the Moroccan diaspora and has also successfully borrowed money on international markets (like in 2010).

Another contribution of diasporas to the development of their localities of origin can be found in development activities undertaken by migrant associations. Migrant associations and associations of solidarity with migrants form a dense network of organisations, sometimes grouped in federations or platforms, at national, pluri-national or thematic levels and active in the fields of representation, advocacy or development work in the countries of origin where they often have developed links with sister organisations. The scale of intervention where migrants associations oriented towards development operate the most efficiently is the local scale. They can build fruitful collaborative relations based on mutual trust with local associations and local authorities. They can provide funding, directly or through contacts with various kinds of donors, for the implementation of development programmes. Their involvement in such activities also contributes to the transfer of experiences, knowledge and know-how. By linking social networks in their host countries with other networks in their localities of origin, they also enhance solidarity and mutual understanding.

Box 9: The association “Migrations et Développement”

The association *Migrations et Développement* established in France is composed of members of the Moroccan diaspora and is aimed at initiating development projects in Moroccan localities. The Association has established partnerships with French development NGOs and some donors. It has recently launched a project funded by the *Agence Française de Développement* (AFD) aimed at promoting agro-ecological practices in the Siroua mountains of Morocco, by establishing links between the new mandates of municipalities and traditional knowledge and know-how. This is a good illustration of development work at local level, leveraging donor funding and reaching out to local communities and local governments with the aim of promoting sustainable agricultural practices.

Eventually, some migrants make it back to their countries of origin. Such returns can take very different forms ranging from forced returns, resettlement programmes, to spontaneous, voluntary returns. Experience has shown that forced returns and even resettlement programmes do not contribute to the development of localities of origin as returnees suffer from a feeling of failure with associated social stigma. They are prone to try and migrate again. By contrast, migrants who choose to come back to their country of origin have often successfully managed their re-integration in their host country. They come back with a sense of achievement and can contribute to local economic development by investing their resources, know-how and social capital.

Conclusion

The “migrant crisis” must be taken seriously as it brings about a lot of suffering, first of all for distress migrants, and can provoke de-stabilising effects in host countries. However, its magnitude should be considered at its exact proportion, especially in rich countries. The number of migrants coming to Europe is still very small when compared to the population.

In order to shift to more inclusive, enabling and positive approaches, stigmatisation and poor-informed discussions and viewpoints should be tackled. As the World Economic Forum mentions in their report “Migration and its Impact on Cities”: “Cities need to invest in research to gather evidence and facts that help city leaders to eliminate preconceived notions regarding migration” (WEF, 2017). This basic attitude is not only applicable to cities alone, but also to the wider perspective of migration. Perspectives should be based on facts and be unbiased.

Enhancing rural development and counterurbanisation can mitigate the overwhelming burden put on cities to absorb increasing migration flows jeopardizing efforts for sustainable urban development. Rural areas are to be considered not as depressed locations from where migrants originate but as a potential haven for displaced populations in search of a better life. The potential of rural areas in terms of job creation and agricultural development has not been fully tapped yet and deserves more attention from national governments and funding bodies. Agricultural and rural development appears as one solution to both the prevention of migrations and the successful integration of migrants.

As discussed in this chapter, solutions to improve livelihoods in countries of origin and the integration of migrants in their host countries exist provided that social innovations are implemented. Governments have a huge responsibility towards migrants and towards themselves, as successfully governing people’s socio-economic perspectives is a chance for countries to retain their position in a globalised, fast changing world.

The fate of migrants and their communities will depend on the type of governance in place in origin and destination countries and the opportunities provided. Recent research and practical experiences have shown the way to efficient and equitable governance, geared towards the implementation of economically and socially transformative policies and programmes, tied to the sustainable development goals. Migrations are but another manifestation of globalisation which, more than ever, also calls for a strong and sound governance of the planet.

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