GLOBAL LAND OUTLOOK  WORKING PAPER

RURAL – URBAN DYNAMICS
POLICY RECOMMENDATIONS

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CONTENTS

Executive Summary                                                                 3
Rural – Urban Dynamics and Multilateral Agreements                                  4

   A. Natural Capital – Capitalising on Existential Co-benefits for Cities 6
   B. Human Capital – Human Beings at the Centre of Sustainable Development 10
   C. Social Capital – Governance, Land and Policy Regulations 15
   D. Manufactured Capital – Sustainable Resource Management and the Circular Economy 18
   E. Financial Capital – Enabling Environments for the Green Economy Transition 25

2. Conclusion                                                                  26
3. Figures Credits                                                               27
4. Bibliography                                                                28
5. Appendix 1. Thematic Questions for a High-Level Political Forum Meeting      31

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These policy recommendations are intended to reaffirm The Charter of the United Nations, and the concept of social inclusion as defined in the UNCCD, UNFCCC and CBD Conventions, as well as the Paris Agreement and the Agenda 2030 for Sustainable Development.
EXECUTIVE SUMMARY

The subject of holistic approaches for rural and urban dynamics has been at the forefront of international dialogues for almost three decades. Changes to our planet resulting from climate change, and other anthropogenic pressures caused by demographic shifts, globalisation, migrations, and the fast-paced development of technology, call for renewed attention to the issue.

The United Nations Convention to Combat Desertification (UNCCD) aims to combat desertification and drought by means of: the Land Degradation Neutrality (LDN) Framework; the engagement of the international community in dealing with the impacts of urbanisation; and more recent awareness of the benefits behind the circular economy. These efforts, combined with a pressing need to make better use of the scarce resources available to us, offer an opportunity to provide a range of implementable recommendations and actions on the ground.

This document aims to identify shared challenges faced by both rural and urban areas, and documents the co-benefits that may arise from joint initiatives to address these challenges. Issues and recommendations are structured around natural, human, social, manufactured and financial capitals.

In the **Natural Capital** chapter, existential co-dependency of rural areas for cities has been identified as a key topic, together with population dependency on agriculture and food security. Opportunities and recommendations are framed around possible utilisation of existing frameworks, such as Land Degradation Neutrality (LDN), the United Nations Decade on Ecosystems Restoration, and the UNCCD Convention recommendations on prevention and rehabilitation of land. These could all be useful, especially when focussing on land use for the regeneration of peri-urban areas. Considerations are also given for the use of land as a carbon sink, especially in the context of cities, which are responsible for 70 per cent of global greenhouse gas emissions. Natural and cultural heritage is intrinsically related, and cases from the past offer valid illustrations of the equilibrium between rural urban dynamics we once had.

The chapter on **Human Capital** places people at the centre of sustainable development and positions poverty alleviation, demographic shifts, globalisation, minority groups, equality and migration as shared challenges experienced by people in rural and urban areas. Opportunities and recommendations are sought in links between skills development, education, capacity building and urbanisation itself that in some places of the world is aiding poverty alleviation.

The chapter on **Social Capital** addresses issues of governance and insufficient land regulations, with an attempt to identify challenges both for constantly growing cities and rural areas. Recommendations touch upon: Land tenure regulations; planning; the role of decentralisation; proposals for special economic zones in peri-urban areas as testing grounds; and schemes for incremental land supply.

The **Manufactured Capital** chapter explores pressures in the built environment sector deriving from a lack of affordable housing and informal settlements, inter alia. It seeks to use the LDN Framework as a possible solution to alleviate persistent and unresolved problems of the over 800 million people living in informal settlements adjacent to rural areas. Opportunities are also sought in improved connectivity, the role of intermediary towns, secondary roads and ICT networks. However, one of the biggest chances for improvement in livelihoods and the provision of new jobs is in the sustainable management of natural resources, and circular economy opportunities. “Zero waste to landfill” strategies both for cities as well as rural areas may prove fundamental for the emergence of a new green economy. Digitalisation for development and technology development and transfer are the cornerstones of contemporary industrialisation and can aid regulatory processes for mapping expanding cities, as well as degraded land.

The chapter on **Financial Capital** acknowledges that implementation of the above recommendations requires financial capital and investment. There are a variety of climate finance solutions available and it is hoped that, together with the assistance of national governments and sustainable micro-finance, a transition to a more balanced rural – urban relationship could be achieved.

A call for joint action concludes this paper, encouraging all stakeholders to take action on the ground in an attempt to holistically enhance the dynamics between rural and urban linkages. The influence of the UNCCD can stimulate a broader engagement of the parties to the Convention, given that land degradation impacts rural and urban habitats, and there are socio, economic and environmental opportunities to be found in the transboundary management of natural resources through a circular economy.
RURAL – URBAN DYNAMICS IN MULTILATERAL AGREEMENTS AND IN INTERNATIONAL DIALOGUES

The topic of Rural – Urban Dynamics in multilateral agreements has been addressed since 1992 with the Rio Declaration on Environment and Development, The Earth Summit and Agenda 21. Agenda 21 recommended at that time addressing the full range of issues facing urban-rural settlements. Subsequent multilateral meetings including the 2012 Rio + 20 Outcome Document of the United Nations Conference on Sustainable Development “The Future We Want” also referred to improvements in urban – rural living conditions.

2015: Agenda 2030, of 2015, specifically refers, in target 11.A, to support positive economic, social and environmental links urban, peri-urban and rural areas. In target 15.6, it aims, By 2030, to combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

The Paris Agreement builds upon the commitments of all three Rio Conventions and reaffirms the call for a holistic approach to sustainable development and combating climate change. UN-HABITAT has been addressing the urban – rural linkages topic since 1977, and the New Urban Agenda reiterates a call for a greater integration between urban and rural areas as well. Recent documents published by UN-HABITAT aimed to focus on urban and rural linkages. These are: “Implementing the New Urban Agenda by Strengthening Urban – Rural Linkages. Leave No One And No Space Behind” (2017), and “Urban – Rural Linkages: Guiding Principles – Framework for Action to Advanced Territorial Development” (2019).

Other organisations have also provided important documents, such as the World Resources Institute Ross Centre Working Paper, “Towards A More Equal City - Upward and Outward Growth: Managing Urban Expansion for More Equitable Cities in the Global South” by Mahendra, A and Seto, K, published in 2019. This is comprised of a review of 499 cities, and their upward and outward growth, using satellite remote sensing, and offering the most recent and relevant reflections on outward urban expansion.


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1 The Rio Declaration on Environment and Development, The Earth Summit and Agenda 21 (1992), Section One, Item 7
2 The Earth Summit and Agenda 21 (1992), Section One, Item 7
9 UNCCD (2017) Global Land Outlook, First Edition
1. THE FIVE CAPITALS AS A HOLISTIC CONCEPTUAL FRAMEWORK FOR THE POLICY ON RURAL – URBAN DYNAMICS

POLICY FOR RURAL – URBAN DYNAMICS HEADLINES

The interlinkages, co-dependencies and integrated nature of rural and urban areas calls for a holistic approach. Only in this manner can balanced development, the growth of cities, reducing the impact on productive land, and sustainable agriculture be addressed. In line with Transforming Our World: the 2030 Agenda for Sustainable Development of 2015 and headlines of People, Planet, Prosperity, Peace and Partnership, the so called “Five Ps”, The UNCCD’s Proposed Policy for Rural – Urban Dynamics is framed around the integrated and adapted concept of “Five Capitals”:

Natural Capital – Capitalising on Existential Co-benefits for Cities

Urban areas depend on healthy ecosystems and ecosystems services, productive land, food production, agriculture and natural resources to sustain the lives of their citizens.

Human Capital – Human Beings at the Centre of Sustainable Development

Demographic shifts and globalisation are putting pressure on expanding cities. Climate change impacts, which are manifested through desertification and droughts, cause land degradation, which in turn reduces land productivity. Migration, minorities inequality and poverty are at the centre of concerns in peri-urban areas and at the forefront of the outward growth of cities. Health and well-being, development of skills and jobs, livelihood strategies for people and communities, including education and capacity building are paramount for the prosperity of both rural areas and cities.

Social Capital – Governance, Land and Policy Regulations

Governance and policies at the national and local levels need to regulate and protect land tenure to ensure prosperous growth. The expansion of cities must be regulated so that it does not encroach on productive land areas. National and local policies, including planning laws and decentralisation, need to act as enablers for joint efforts to ensure socially inclusive sustainable development. The concept of “Build together, Benefit together” local actions need to become the rule in urban, peri-urban and rural areas.

Manufactured Capital – Sustainable Resource Management and the Circular Economy

Strategies for alternative livelihoods can be found through Sustainable Resource Management and the Circular Economy, addressing issues of biological and municipal waste, whilst protecting against environmental degradation, ensuring just transition towards green jobs and creating new industries. Transport, infrastructure, sustainable energy provisions, technology transfer, digitalisation for development, research and innovation can play a vital role in finding local solutions and foster regional collaboration through transboundary natural resource management (UNCCD).

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12 UN Transforming Our World: the 2030 Agenda for Sustainable Development (2015)
Financial Capital – Enabling Environments for the Green Economy Transition

A green economy is a benefit for all.\textsuperscript{15} Financing a just transition to green jobs and creating enabling environments for sustainable growth in peri-urban areas, including incentives and investment in agriculture, are important factors for the successful expansion of cities in coexistence with prosperous rural areas.

A. NATURAL CAPITAL – CAPITALISING ON EXISTENTIAL CO-BENEFITS FOR CITIES

Urban areas depend on healthy ecosystems and ecosystem services, productive land, food production, agriculture and natural resources to sustain the lives of their citizens.

Sub – themes:
- Ecosystems and ecosystem services
- Water, air and food security
- Land Use
- Natural Resources *

*Sub-headings for all five capitals include current financial mechanisms, themes for reduction of emissions, and increased resilience.\textsuperscript{16}

A1. CO-DEPENDENCIES IN THE NATURAL CAPITAL BETWEEN RURAL – URBAN DYNAMICS.

The health of the cities depends on the health of the rural areas. E.F. Schumacher\textsuperscript{17}

a. Cities’ existential dependencies on rural areas

Water, clean air, food and shelter are fundamental to sustaining the life of every person. Despite recent advancements in technology and the rise of man-made internet-based ecosystems, people and citizens, of urban and rural areas, will continue to depend on land services for the provision of water, clean air and food.

Climate change is an urgent threat\textsuperscript{18} affecting both rural areas and cities. This threat, combined with anthropogenic pressures\textsuperscript{19}, such as globalisation and the rapid urbanisation of ecosystems, brings an additional set of pressures to bear on the local dynamics between rural areas and cities. Trade and continents. However, this trend is unsustainable for regional resilience in countries experiencing serious drought and/or desertification, particularly in Africa.\textsuperscript{20} For this reason, local and regional links between rural areas and cities need to be strengthened and supported.

b. Food security and population dependencies on agriculture

Demographic shifts are impacting food production. Today, 55 per cent of the world’s population lives in urban areas, a proportion that is expected to increase to 68 per cent by 2050. 45% of the world’s population lives in rural areas, projections show that urbanisation, combined with the overall growth of the world’s population, could add another 2.5 billion people to urban areas by 2050. The global rural population is now close to 3.4 billion and is expected to rise slightly and then decline to 3.1 billion by 2050.\textsuperscript{21}

\textsuperscript{18} UNFCCC (2015) The Paris Agreement, Preamble, p.21
\textsuperscript{20} The United Nations Convention to Combat Desertification, 1994, p. 2 Preamble
Despite the global trend in rural–urban migrations, agriculture, productive land and healthy ecosystems will continue to play an important role in food security in both urban and rural areas. Africa and Asia were home to nearly 90 per cent of the world’s rural population in 2018.

India has the largest rural population (893 million), followed by China (578 million). Urbanisation as a trend has brought a change in dietary requirements, which in turn is impacting agricultural productivity.

Agriculture has become a major contributor to environmental degradation through: increased greenhouse gas emissions, soil degradation, desertification, freshwater scarcity, biodiversity loss, pest resistance and water pollution (FAO, 2011). Mostly as a result of intensive farming, about a third of the world’s soil has already been degraded and, if current rates continue, all of the world’s topsoil could be degraded in 60 years (FAO, 2015). These environmental challenges contribute to environmental degradation at both global and local levels.

Soil erosion lowers our ability to grow crops. It also releases carbon trapped in the soil which heats the atmosphere. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimates that soil degradation affects nearly half of the world’s people, at least 3.2 billion.

c. Water scarcity

Half of all cities with populations greater than 100,000 are currently located in water-scarce basins, with freshwater sources running dry as more water is extracted than refilled. As a result, an estimated 150 million people currently live in cities with acute water shortages. Driven by population growth and a growing consumer class, by 2030 water demand will increase by 40 per cent and by 2050, global demand for food and energy will increase by 50 per cent.

These extreme pressures on land and natural capital are connected to our capacity to feed the global population. The Food and Agriculture Organisation of the United Nations (FAO) estimates that there are 867 million chronically undernourished people in the world today. Seventy per cent of the world’s food insecure live in rural areas, and 60 per cent of the world’s population rely on agriculture for their livelihoods.

Taking these figures into account, uncontrolled urban expansion on arable land must be met with greater regulations and governance so as to support the productive and agricultural capacity of rural areas.

A2. A POSSIBLE WAY FORWARD

In line with the UNCCD Convention recommendations on avoidance of duplication of effort, the following are existing frameworks which could be adapted, where applicable, to enhance rural – urban relationships particularly in peri-urban areas:

a. Sustainable land management to prevent productive land loss – a paradigm shift via the scientific conceptual framework for Land Degradation Neutrality (LDN)

The UNCCD LDN framework offers an opportunity for land restoration in the context of soil erosion, uncontrolled urbanisation and the implementation of Sustainable Development Goal 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world

This is an approach that counterbalances the expected loss of productive land with the recovery of already degraded areas. It encourages the restoration of degraded land in the same physical location where new

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25 UNFCCC COP14 ICCD/COP(14)/INF-X, Item IV, A. 18.
26 FAO Statistical Yearbook, 2013, José Graziano da Silva FAO Director-General
27 The United Nations Convention to Combat Desertification, 1994, Article 8, p.9
29 UN, Transforming our world: the 2030 Agenda for Sustainable Development, 21 October 2015, p.24/25
degradation is expected to occur. 31 If taken literally in the context of rural and urban dynamics, peri-urban areas would benefit greatly from the restoration of degraded land.

Only 3 per cent of the planet's surface is suitable for arable production and 75 billion tonnes of fertile soil are lost to land degradation every year. 32 Cities will have tripled in size between 2000 and 2030, and are on track to reach 80 per cent growth in the next 18 years. The need for smart, dense, and sustainable growth is paramount, otherwise, the current state of unmanaged growth in land area will not only create more inequality, but add to economic and environmental risks. 33

The existing UNCCD's LDN framework adopted for rural areas in the context of land degradation could be extended, where appropriate, to peri-urban areas in order to mitigate urban sprawl and the uncontrolled outward expansion of cities, particularly on arable land. This needs to be supplemented by governance, policies and financial mechanisms, which shall be discussed further in the chapters on Human, Social, Manufactured and Financial Capitals. Figures 1 and 2 show the outward growth of cities, particularly in Asia, South West Africa and to some extent Latin America and those areas most affected by soil erosion.

b. United Nations Decade on Ecosystem Restoration (2021–2030)34

The Resolution adopted by the General Assembly in March 2019 on the UN Decade on Ecosystem Restoration offers another opportunity to strengthen rural – urban dynamics in the context of ecosystems. The Resolution reaffirms the New Urban Agenda, adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) (…) and its vision for cities and human settlements that protect, conserve, restore and promote their ecosystems, water, natural habitats and biodiversity, minimise their environmental impact and effect a change to sustainable consumption and production patterns. 35

Member states are encouraged to foster the political will, the mobilisation of resources, capacity-building, scientific research and cooperation and momentum for ecosystem restoration at the global, regional, national and local levels, as appropriate. 36

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32 https://www.bbc.co.uk/news/science-environment-48043134, Prof Jane Rickson from Cranfield University, UK, 29 April 2019
34 The United Nations Decade on Ecosystem Restoration (2021–2030), Resolution adopted by the General Assembly on 1.3.2019
The Convention on Biological Diversity defines an ‘ecosystem’ as a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit. A conceptual framework of joining man-made ecosystems of cities with terrestrial ecosystems including rural areas could further enhance a holistic restoration of ecosystems.

c. Prevention, rehabilitation and reclamation of land in peri-urban areas

The UNCCD Convention recommendations on combatting desertification include activities which are part of the integrated development of land in arid, semi-arid and dry sub-humid areas for sustainable development and are aimed at:

(i) prevention and/or reduction of land degradation;
(ii) rehabilitation of partly degraded land; and
(iii) reclamation of desertified land.

These recommendations could be extended as appropriate to activities in peri-urban areas, as demonstrated in Fig 3. Rehabilitation of partly degraded land outside and within territorial areas of cities can be achieved through afforestation and/or revegetation. Public parks and urban agriculture, contributing 20 per cent to the world’s food production, could bring mutual co-benefits for people – including the creation of urban micro-climates and improvements to air-quality. The World Health Organisation (WHO) estimates that 4.2 million deaths every year occur as a result of exposure to ambient (outdoor) air pollution, and that 91 per cent of the world’s population lives in places where air pollution exceeds WHO guideline limits.

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38 UNCCD (2017) Global Land Outlook, p.56
39 The Convention on Biological Diversity (1992), p.3
40 The United Nations Convention to Combat Desertification (1994), Article 1, p.4
c. Land and forests as carbon sinks

Cities occupy only 2 per cent of terrestrial ecosystems, yet consume over two-thirds of the world’s energy and account for more than 70 per cent of global CO2 emissions. Three times more carbon is stored in the soil than in the atmosphere. Land degradation and desertification cause a decline in the many essential services provided by ecosystems, including provision of food and fibre, carbon sequestration, regulation of water supply, conservation of (agro) biodiversity and cultural heritage. The UNCCD’s LDN framework recommends progress reports on indicators and associated metrics for land cover, land cover change, land productivity and carbon stocks that are also being considered for the monitoring of SDG 15.3. These demonstrate the important role that natural capital has in its capacity to absorb carbon in the soil, oceans or forests and to absorb CO2 emissions produced by constantly expanding cities.

d. Natural and cultural heritage.

There is also a cultural and historical dimension to the relationship between cities, land and their ecosystems. The UNESCO’s Convention Concerning the Protection of the World Cultural and Natural Heritage notes that cultural heritage and natural heritage are increasingly threatened with destruction, not only by traditional causes of decay, but also by changing social and economic conditions which aggravate the situation with even more formidable phenomena of damage or destruction. The Convention also acknowledges the combined works of

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42 The United Nations Convention to Combat Desertification (1994), Article 1, p.4
44 https://www.bbc.co.uk/news/science-environment-48043134 Dr Joanna Clark, The University of Reading
47 The Paris Agreement (2015), UNFCCC, Article , p. 22
48 UNESCO (1972) Convention Concerning the Protection of the World Cultural and Natural Heritage
nature and man and their outstanding universal value. Some of UNESCO’s World Heritage Sites demonstrate places of outstanding natural beauty and human habitat coexisting in harmony.

The FAO’s Globally Important Agricultural Heritage Systems (GIAHS) programme, recognises outstanding landscapes of aesthetic beauty that combine agricultural biodiversity, resilient ecosystems and valuable cultural heritage. The fifty two sites selected across the world, offer compelling examples of how remarkable landscapes that stem from ingenious systems and technologies of land and water management, are home to sustainable agricultural systems that contribute to food and livelihood security. The unique agro-biodiversity is enhanced by traditional knowledge and technologies, the natural environment coexists in symbiosis with man-made rural towns and villages. These examples offer compelling studies for possible adaptation mechanisms in peri-urban areas suffering from uncontrolled urbanisation.

B. HUMAN CAPITAL – HUMAN BEINGS AT THE CENTRE OF SUSTAINABLE DEVELOPMENT

Demographic shifts and globalisation are putting pressure on expanding cities. Climate change impacts, which are manifested through desertification and droughts, cause land degradation, which in turn reduces land productivity. Migration and poverty are at the centre of concerns in peri-urban areas and at the forefront of the outward growth of cities. Health and well-being, development of skills and jobs, livelihood strategies for people and communities, including education and capacity building, are paramount for the prosperity of rural areas and cities.

Sub – themes:
- Health and well-being.
- Skills and jobs.
- Livelihoods of people and communities.
- Education and capacity building.

Human beings are at the centre of Sustainable Development Agenda.


a. Human beings are at the centre of concerns.

The UNCCD Convention affirms in its Preamble that human beings in affected or threatened areas are at the centre of concerns to combat desertification and mitigate the effects of drought.

This policy aims at greater synergies between rural and urban areas and the health and well-being of all citizens inhabiting cities and rural areas, whilst also ensuring environmental sustainability.

b. Rural – urban dynamics and poverty alleviation.

According to the World Bank: in 2015, 736 million people lived on less than USD 1.90 a day, down from 1.85 billion in 1990. Globally, extreme poverty continues to be overwhelmingly rural: an estimated 79 per cent of those experiencing poverty live in rural areas. UN-HABITAT estimates that almost 1 billion people currently live in slums. By 2030, UN-Habitat estimates 3 billion people will need access to adequate and affordable housing.

Today, 25 per cent of the urban population live in slums, characterised by poverty, population density, contaminated environments and a lack of formal land tenure, which limits access to water and sanitation, energy, solid waste management and mobility. Some 2.1 billion people lack safe drinking water in their homes and double

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49 UNESCO (1972) Convention Concerning the Protection of the World Cultural and Natural Heritage, Preamble p. 1 and Article 1, p.2
52 The United Nations Convention to Combat Desertification, (1994) Preamble, p 1
56 UN-HABITAT (2018) Sustainable Cities and Communities, p.3
that number do not have safe sanitation. Up to 132 million people in cities have no electricity, and many spend up to 30 per cent of their income on transport.\footnote{UN-HABITAT (2018) Sustainable Cities and Communities, p.13}

The UNDP 2018 Global Multidimensional Poverty Index (MPI)\footnote{UNDP (2018) The 2018 Global Multidimensional Poverty Index (MPI) \url{http://hdr.undp.org/en/2018-MPI}} combines three dimensions of poverty in the context of health, education and standard of living. The MPI identifies, in addition to nutrition\footnote{According to FAO in 2017, the number of undernourished people is estimated to have reached 821 million – around one person out of every nine in the world. Nearly 151 million children under five have stunted growth (ref. item below).} and child mortality, years of schooling and school attendance, and basic issues such as access to cooking fuel, sanitation, drinking water, electricity, housing and assets. Whilst acknowledging that a greater percentage of the poor live in rural areas, the percentage of the urban poor is alarming and it is increasing with the growth of cities. Peri-urban areas are often home to informal settlements and it is in such areas that rural migration merges into urban poor.

Sustainable transformations in peri-urban areas could become the catalyst for poverty alleviation and a testing ground for the implementation of Sustainable Development Goal No 1.


c. Demographic shifts

Global demographic trends are at a turning point: population growth is slowing markedly, and after increasing for five decades, the proportion of people aged 15 to 64, the typical working age population, is now starting to fall. The rise in the number of dependents per person of working age is driven mainly by an increase in the elderly as a percentage of the population. Beneath these global dynamics lie major differences in demographic characteristics and trends at the country level. Some countries continue to experience high levels of fertility and population growth, while in others fertility rates have fallen below replacement levels, and rapid ageing and gradual population contractions are expected in the coming decades.\footnote{World Bank (2016) Global Monitoring Report 2015 Demographic-Change. P. 137}
The drivers of demographic change are the three fundamental factors in changing population size and age structure – mortality, fertility, and migration across and within countries, which in turn are closely tied to development progress.63

These developmental changes affect the growth of cities, and consequently also affect rural-urban dynamics. This regards the high percentage of youth in Africa’s population, as well as the role of women when it comes to pressing developmental changes. The African continent is undergoing profound demographic changes, characterised by declining fertility and child mortality rates coupled with rapid population growth. About 41 per cent of the people on the African continent are below 15 years of age, while another 19 per cent are young people between 15 and 24 years of age.64

Meeting the social aspirations of African youth will be one of the key issues related to retaining people in rural areas with a quality of jobs that meets their personal self-esteem needs.

d. Globalisation and migration

i. Migration in the context of demographic changes and globalisation

International migration is a complex phenomenon that touches on a multiplicity of economic, social and security aspects affecting our daily lives in an increasingly interconnected world. Migration is a term that encompasses a wide variety of movements and situations involving people of all walks of life and backgrounds. More than ever before, migration touches all states and people in an era of deepening globalisation. Migration is intertwined with geopolitics, trade and cultural exchange, and provides opportunities for states, businesses and communities to benefit enormously. Migration has helped improve people’s lives in both origin and destination countries and has offered opportunities for millions of people worldwide to forge safe and meaningful lives abroad. Not all migration occurs in positive circumstances however. We have in recent years seen an increase in migration and displacement occurring due to conflict, persecution, environmental degradation and change, and a profound lack of human security and opportunity.65 The United Nations International Organisation for Migration, based on UN DESA statistics, estimates that in 2015 over 243 million people were international migrants, approximately 3.3 per cent of the global population.66 UNHCR Global Trends report finds 65.3 million people, or one person in 113, were displaced from their homes by conflict and persecution in 2015.67 Amongst them were refugees, forced to flee his or her country because of persecution, war or violence68 in contrary to voluntary migration and people who choose to migrate mainly to improve their livelihoods.

ii. Rural to urban migration

The World Bank links rapid urbanisation to demographic change in the context of developmental challenges. Internal migration and the rise of large urban agglomerations in developing countries are essential parts of the story of demographic change. Higher population growth in rural areas tends to translate into rural-urban migration. Studies suggest that about half of the urbanisation growth in the world results from internal rural-to-urban migration and area reclassifications (UN 2008). People moving to cities are attracted by the various job opportunities, higher wages, the many local amenities such as cultural and recreational offerings, and the availability of public utilities and transportation facilities. About 90 per cent of the urban growth in the next 15 years will be concentrated in Asia and Sub-Saharan Africa. Already home to most of the world’s slum population, these two regions are expected to see a significant increase in those numbers.69

iii. Climate change migration

In addition to rural – city migration the attractive power of cities, the FAO identified climate change as another cause of rural-urban migration which intensifies other socio-economic migration drivers, such as rural poverty and food insecurity. The short and long-term effects of climate change have significant impacts on agricultural productivity, rural livelihoods and, indirectly, migration flows. Migration in the context of climate change has multiple causes. The combination of climate-related risks with socio-economic drivers increases the vulnerability of agriculture, leads to loss of livelihoods and thereby triggers migration.70

68 https://www.unrefugees.org/refugee-facts/what-is-a-refugee/
Between 2008 and 2015, an average of 26.4 million people were displaced annually by natural-hazard-induced and climate-related disasters – a trend which is rising.\(^{71}\)

iv. Migration and impact on urbanisation

UN-HABITAT positions migration at the core of urbanisation, and in line with The Global Compact for Migration\(^ {72}\) and the New Urban Agenda\(^ {73}\), it is working with cities on shared responsibilities and unity of purpose in the hope of making migration work for all. Entry points identified by UN-HABITAT in tackling causes of migration are: reducing impacts of climate change (including coastal areas; but also drought, flooding and other natural hazards); reducing conflict over land, water, other natural resources; poverty reduction and fixing development gaps; spatial inequality including basic services; social services; financial and administrative services; employment opportunities.\(^ {74}\)

Migration, like poverty, affects rural and urban areas in the context of people’s well-being and human capital; both intersect in peri-urban areas on the arrival of people to cities. Rural to urban migration, combined with changes to population dynamics, brings a growing demand for new jobs and the provision of basic services.

B2. A POSSIBLE WAY FORWARD

a. Links between jobs and environment

According to the International Labour Organisation (ILO)\(^ {75}\); from jobs perspective, environmental sustainability is critical. In fact, the increasing frequency and intensity of natural disasters associated with human activity have already lowered productivity.

Currently, 1.2 billion jobs rely directly on the effective management and sustainability of a healthy environment, in particular jobs in farming, fishing and forestry are dependent on natural processes, such as air and water purification, soil renewal and fertilisation, pollination, pest control, the moderation of extreme temperatures, and protection against storms, floods and strong winds. Environmental degradation threatens these ecosystem services and the jobs that depend on them. The effects of environmental degradation on the world of work are particularly acute for the most vulnerable workers. Workers from lower-income countries and Small Island Developing States, rural workers, people in poverty, indigenous and tribal peoples and other disadvantaged groups are affected the most by the impact of climate change. The transition to a green economy is not only urgent for the sake of the planet, but is also compatible with needed improvements in decent work.\(^ {76}\)

The quest is to evaluate whether, within local conditions and circumstances, new green jobs can be created with local resources (including, but not limited to, natural resources) and local human capital. It is a quest for adaptation processes in reviving traditional technologies in combination with new approaches to technology, aiding developmental changes and transboundary approaches to development through shared knowledge.

b. Urbanisation and eradication of poverty

Urbanisation can play a key role in eradicating rural poverty. Research in India found that an increase of 200,000 in the urban population resulted in a decrease of 1.3 to 2.6 per cent in rural poverty. Overall, these urban-rural linkages were behind a reduction of 13 to 25 per cent in rural poverty in India between 1983 and 1999. In some instances, urban-rural linkages have transformative implications for global poverty reduction. However, the benefits of urbanisation should not be limited to large cities but made available to small and medium towns. The adequate provision of infrastructure and opportunities in small and medium cities can promote rural urbanisation and contribute to achieving a more balanced population distribution.\(^ {77}\)


\(^{72}\) IOM/UN Migration (2018) The Global Compact for Safe, Orderly and Regular Migration and This World Migration Report, 2018

\(^{73}\) UN-HABITAT (2016) The New Urban Agenda, Habitat III

\(^{74}\) UN-HABITAT (2018) Brief on Migration and cities, p 7


\(^{76}\) ILO (2018) World Employment and Social Outlook 2018: Greening with jobs, p 2

c. Skills, education and capacity building for a new economic transition.

The UNCCD Convention, in Article 19, on capacity building, education and public awareness, recommends innovative ways of promoting alternative livelihoods, including training in new skills to all social groups.\textsuperscript{78}

i. Skills and green economy, particularly in Africa

The ILO acknowledges that skills development programmes for enterprises and workers facilitate the transition to a green economy, though they are yet to be mainstreamed in policy discussions. Skills development programmes are crucial to the achievement of a just transition.\textsuperscript{79} Some countries have established platforms to anticipate skills-needs, and the provision of training in general, but they are not all used to discuss the skills-implications of the green transition. The active participation of social partners is useful in identifying skills-gaps, implementing training provisions, emphasising that higher skills translate into higher pay, and recognising the skills acquired on the job. However, social partners are not always involved in the relevant discussions; this is especially the case with workers. Greater awareness of environmental issues, and their mainstreaming in skills policy discussions, are required to ensure adequate identification of skills-needs and implementation of training programmes in response to labour market needs.\textsuperscript{80}

The UNCCD recommendations of 1992 on the support and implementation of action programmes with participatory action at the local community level\textsuperscript{81} are still very much relevant in the provision and assessments of skills-development at the community level.

ii. Sectorial approaches to skills-development and different levels of skills

Sectorial approaches to skills-development\textsuperscript{82}, and the broadening of skills sectors beyond agriculture and forestry for rural areas, and beyond manufacturing for urban areas, to all twenty-two industrial sectors recognised by the United Nations (where applicable), can bring diversified cross-sectorial skills and economic solutions with co-benefits for rural and urban areas. Some sectors, such as the electricity and energy sector, transportation and storage or water supply sectors, could act as enablers not only for poverty alleviation but also for sustainable economic growth for rural and urban areas.

New skills could be also diversified at various levels of complexity and dependent on a range of jobs from basic skills, intermediate technology skills connected to manual labour, and where appropriate ‘high-tech’ skills that are becoming apparent with the rise of the Fourth Industrial Revolution.

iii. Skills-development for the youth

The African Union Youth Division defines skills-development though the African Union’s vision for Agenda 2063 and considers it a mechanism for eliminating youth unemployment. Agenda 2063 sets out aspirations to “catalyse an education and skills revolution and actively promote science, technology, research and innovation, to build knowledge, human resources, capabilities and skills for the African century”. Skills-development is focused on Vocational Education and Training (TVET) through scaled-up investments, the establishment of a pool of high-quality technical TVET and centres across Africa. This includes, greater links with industry and alignment to labour markets, with a view to improve the skills profile, employability and entrepreneurship of youth and women especially, thereby closing the skills gap across the continent. Implementation of skills is complemented by the wider global framework of Sustainable Development Goals (SDGs), particularly goal 4 which aims at ensuring inclusive and equitable quality education and the promotion of lifelong learning opportunities for all by 2030.

SDG 4, target 4.4, aims to: “substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.”\textsuperscript{83}

iv. Skills, jobs and education for women

Gender equality matters not only in its own right but also as an instrument for development. There is vast potential for growth, poverty reduction, and shared prosperity via improved gender equality in the labour market,

\textsuperscript{78} The United Nations Convention to Combat Desertification (1994) Article 19 Item h, p.17
\textsuperscript{79} ILO (2018) World Employment and Social Outlook 2018: Greening with jobs p.4
\textsuperscript{80} ILO (2018) World Employment and Social Outlook 2018: Greening with jobs p.4
\textsuperscript{81} The United Nations Convention to Combat Desertification (1994), Article 13, Item c, p.12
\textsuperscript{82} The International Standard Industrial Classification of All Economic Activities (ISIC) https://unstats.un.org/unsd/publication/seriessm/seriessm_4rev4e.pdf
which can in turn have large impacts on productivity. Social norms and legal restrictions that largely shape the agency of women and girls are key factors underlying gender-based differences in access to opportunity. For instance, traditional roles and associated time-use patterns constrain women’s economic opportunities: housework, childrearing, and elderly care are often considered primarily women’s responsibility. A range of specific measures could help address prevailing gender gaps in economic opportunity throughout the life cycle. Improving women’s financial access by making it easier to open accounts and obtain lines of credit would also benefit growth.84

Gender differences in social and economic roles and responsibilities exacerbate the vulnerability of women, who have lower access than men to resources to adapt to climate change, including land, credit, agricultural inputs, decision-making bodies, technology, social insurance and training. For the majority of women working in the informal economy and in small enterprises, it is particularly difficult to recover from the effects of environmental disasters (ILO, 2009; IPCC, 2014b).85

Recognising the role of women in combatting desertification and drought, the UNCCD published the Gender Action Plan. The Convention recognises the importance of women in the implementation of the Convention, and identifies critical areas for their engagement: (i) awareness-raising, and participation in the design and implementation of programmes; (ii) decision-making processes that men and women adopt at the local level in the governance of development, implementation and review of regional and national action programmes (Regional Action Programmes (RAPs) and National Adaptation Plans (NAPs); and (iii) capacity-building, education and public awareness, particularly at the local level through the support of local organisations.86

<table>
<thead>
<tr>
<th>2008 The International Standard Industrial Classification of All Economic Activities (ISIC)</th>
<th>K. Financial and insurance activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Agriculture, forestry and fishing</td>
<td>M. Professional, scientific activities</td>
</tr>
<tr>
<td>B. Mining and quarrying</td>
<td>N. Administrative and support services</td>
</tr>
<tr>
<td>C. Manufacturing</td>
<td>O. Public administration and defence</td>
</tr>
<tr>
<td>D. Electricity, gas, steam and air conditioning</td>
<td>P. Education</td>
</tr>
<tr>
<td>E. Water supply, waste management</td>
<td>Q. Human health and social work activities</td>
</tr>
<tr>
<td>F. Construction</td>
<td>R. Arts, entertainment and recreation</td>
</tr>
<tr>
<td>G. Wholesale and retail trade; repairs</td>
<td>S. Other service activities</td>
</tr>
<tr>
<td>H. Transportation and storage</td>
<td>T. Activities of households as employers</td>
</tr>
<tr>
<td>I. Accommodation and food service activities</td>
<td>U. Activities of extraterritorial organizations and bodies</td>
</tr>
<tr>
<td>J. Information and communication</td>
<td></td>
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</tbody>
</table>

Fig 5. The International Standard Industrial Classification of All Economic Activities (ISIC) of 2008, is a United Nations industry classification system. Industrial sectors are important references for a diverse jobs and skills creation in urban, peri-urban and rural areas.

C. SOCIAL CAPITAL – GOVERNANCE, LAND AND POLICY REGULATIONS

Governance and policies at the national and local levels need to regulate and protect land tenure to ensure prosperous growth. The expansion of cities must be regulated so that it does not encroach on productive land areas. National and local policies, including planning law and decentralisation, need to act as enablers for joint efforts to ensure sustainable development and “build together, benefit together” local actions in urban, peri-urban and rural areas.

Sub – themes:

- Governance and institutions.
- Policies and regulations.

C1. CO-DEPENDENCIES IN THE HUMAN CAPITAL BETWEEN RURAL – URBAN DYNAMICS.

a. Governance and insufficient land regulations

Growing cities, particularly in Asia and Sub-Saharan Africa, will continue to experience population growth and demand for new land. Unregulated outward growth of cities poses a challenge to their capacity to grow sustainably and from the perspective of rural areas, unregulated growth consumes arable land. This in itself is having implications on rural ecosystems and people’s livelihoods.

The issue of governance has two dimensions. One relates to the capacity of cities to regulate land in the expanded areas with private land owners, and at the same time their capacity to constantly readjust to growing city municipal boundaries. On the other hand, land use in rural areas needs to be regulated too, so that cities do grow not on arable land, but on designated degraded soil.

i. Rural governance

The UNCCD Land Degradation Neutrality Framework (LDN) recognizes that land is fixed in quantity and that there is competition to control its resources, which includes competition deriving from rapid urbanisation. Whilst acknowledging the critical existential co-dependency of cities on land ecology that is critical, particularly in arid, semi-arid and dry sub-humid areas – the LDN Science Policy Interface (SPI) argues that the productive potential of land must be increased in order to deliver the goods and services required by a growing and increasingly affluent population, including increased per capita demand for high-quality nutritious food. LDN SPI emphasises the key role of national governments in the implementation of its recommendations.

ii. Urban governance

The World Resources Institute (WRI) Ross Center for Sustainable Cities carried out an analysis of the upward and outward growth of 499 cities. This analysis confirms that the challenges of rapid outward expansion are greatest in lower-income cities that have weak planning and land governance and less mature financial markets.

Much empirical evidence exists on how a city’s increased spatial extent and the decline in its population density increases its per capita costs to provide public services, as well as the social costs associated with congestion, pollution, and urban inefficiencies. These land development patterns are difficult to reverse and significantly affect the consumption of resources such as land, energy, and water.

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b. Land tenure regulations

The WRI\textsuperscript{90} distinguishes three principles for urban governance and land tenure:

i. Transparent records of land titles, occupancy, and transactions

Good records of land ownership are a prerequisite for drafting effective land regulations and designing incentive schemes. Unjustified private capture of land value can be avoided when complete and up-to-date land records enable local authorities to appropriately assess and tax properties. While the absence of secure tenure and title in informal housing limits public investments in basic services, some cities are paying more attention to existing informal, community-recognised titles and tenure systems. The coexistence of multiple land tenure systems involving public, private, tribal, and customary ownership, particularly in African cities, creates challenges, but increasingly countries like Zambia, Botswana, and Namibia are recognising customary land ownership as part of formal tenure systems. Satellite imagery aimed at identifying informal settlement locations offers a new opportunity to complete land records.\textsuperscript{91}

ii. Incentives for cross-agency coordination with local authority to enforce plans

In many growing peri-urban areas, conflicts are common between rural and urban authorities regarding jurisdiction, policy enforcement, and who pays for service provision. Of central importance are governance processes that give cities authority to enforce development plans and provide incentives from higher levels of government (national, state, or metropolitan) for cross-jurisdictional, cross-sectoral coordination.\textsuperscript{92}

iii. Participation of the under-served in land readjustment and development schemes

Land-related policies and plans must prioritise public participation, must be enforceable, and should include mechanisms that are unlikely to be challenged or altered by short-term priorities.\textsuperscript{93}


Organisations such as the Global Land Tool Network (GLTN) facilitated by UN-HABITAT, a multi-sectoral alliance of international partners, is committed to ensuring access to land and tenure security for all, with a particular focus on the poor, women and youth. The Network’s partners include international rural and urban civil society organisations, research and training institutions, bilateral and multilateral organisations, and international professional bodies.94


According to the World Bank: women in half of the countries in the world are unable to assert equal land and property rights despite legal protections. Secure land rights are essential for women's economic empowerment and creating incentives for investment, providing an asset that can be leveraged for agriculture or business development, and offering a solid foundation for financial stability.96,97

c. Planning.

Target 11.a of Sustainable Development Goal 11 on making cities and human settlements inclusive, safe, resilient and sustainable Target 11.a recommends:

11.A Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning.98

Good planning as well as good governance is required both for expanding cities as well as for optimal rural land-use. A majority of published assessments call for the use of planning as a tool for a more balanced development between rural and urban areas.

UN-HABITAT, through the implementation of the New Urban Agenda defined in “Implementing the New Urban Agenda by Strengthening Urban-Rural Linkages” highlights the importance of regional and territorial planning for integrated urban and rural development as an entry point for Strengthening Urban-Rural Linkages.99

i. Recommendations for improvements in planning law

Urban-Rural Linkages require a long-term enabling policy framework under the umbrella of national guidance in line with participatory planning and management of integrated development. Rising inequalities in rural as well as

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94 The Global Land Tool Network (GLTN) https://gltn.net/about-gltn/
97 Further information on Land Tenure can be found in the UNCCD (2017) Global Land Outlook, First Edition, p.81
urban areas requires a flexible planning system that can be adjusted to the needs of low- and high-income citizens. The adaptability of this framework to local areas and to changing circumstances is equally important.

UN-HABITAT established the International Guidelines on Urban and Territorial Planning (IG-UTP) in 2015, as a global framework for improving policies, plans, design and implementation processes that will lead to more compact, socially inclusive, better integrated and connected cities and territories that foster sustainable urban development and are resilient to climate change. (...) Addressing Urban-Rural Linkages through the IG-UTP means identifying urban-rural synergies and entry points to the planning system in order to promote economies of scale and agglomeration, increase productivity, improve connectivity and flows, and better connect the overall interactions and processes occurring at the regional and metropolitan levels on the path towards more sustainable urban development.100

Within the urban-rural linkages planning system UN-HABITAT recommends: improvement to urban-rural connectivity through infrastructure and regulations including water management; infrastructure that is strategically linked to markets and services; development of inclusive governance; promotion of city-region land use and regional and territorial planning that takes into account urban, peri-urban and rural areas; fostering effective land and property management and land systems; development of integrated regional strategies through local and regional characteristics and elaborating on mixed spaces, combining urban and rural characteristics.101

ii. The role of decentralisation

Decentralisation through the transfer of authority from central to local government (subject to national circumstances and recommendations), continues to play an important role for local authorities and cities in order to actually implement policies and governance at the local level. This is crucial for an integrated approach to rural-urban development. Social dialogue and participatory approaches can ensure that whilst strengthening governance and policy frameworks, the ‘green transition’ is a ‘just transition’.

UN-HABITAT established, in the International Guidelines on Decentralisation and Access to Basic Services for all (2009),102 that decentralisation is an important catalyst for policy and institutional reform at the national level to further enable and empower local authorities to improve urban governance.

C2. A POSSIBLE WAY FORWARD

a. Special economic and ecological zones in peri-urban areas for testing new dynamics between rural and urban areas

Whilst adjustments to governance and planning require the introduction of laws or the adaptation of existing regulations to the new and changing realities of growing cities, designating special zones where a new relationship between rural and urban areas could be tested in practice through pilot projects could bring effective results. Considerations should be given to equitable land tenure rules and rights. Similar approaches have been successfully implemented in cases of transition from mining industries to green economies, and for stimulating circular economy growth in some countries.

b. Incremental increase of land supply

The WRI recommends an incremental increase in the supply of serviced land by forming partnerships to finance core services, especially in peri-urban areas. Increased supply of serviced land through land readjustment schemes and partnerships to finance and deliver core services - “build together, benefit together” can create a greater synergy between urban and rural areas.103

D. MANUFACTURED CAPITAL – SUSTAINABLE RESOURCE MANAGEMENT AND CIRCULAR ECONOMY

Strategies for alternative livelihoods can be found through Sustainable Resource Management and Circular Economy, addressing issues of biological and municipal waste, whilst protecting environmental degradation, ensuring a just transition towards green jobs and creating new industries. Transport, infrastructure, sustainable energy provisions, technology transfer, digitalisation for development, research and innovation can all play a vital...
role in finding local solutions and foster regional collaboration through transboundary natural resource management (UNCCD).  

Sub-themes:
- Built environment, cities and infrastructure.
- Resource management and circular economy.
- Transport and energy.
- Industries, goods and services.

D1. CO-DEPENDENCIES IN THE MANUFACTURED CAPITAL BETWEEN RURAL – URBAN DYNAMICS.

a. Affordable housing and legalisation of informal settlements

Housing accounts for more than 70 per cent of land use in most cities and determines urban form and densities; it also provides employment and contributes to growth. A combination of a lack of affordable housing, unaffordable land prices, social inequalities, rural to urban movement and climate migrations are contributing to the existence of informal settlements on the boundaries of cities adjacent to rural areas.

Today, around the world, a quarter of the urban population live in slums. In developing countries, 881 million urban residents live in slum conditions. In 1990, this figure was 689 million. This represents an increase of 28 per cent in slum dwellers’ absolute numbers over the past 15 years. Slums are spontaneously emerging as a dominant and distinct type of settlement in the cities of the developing world. Since 2000, the global slum population grew on average by six million a year. This means an increase of 16,500 persons daily. In Sub-Saharan Africa, 59 per cent of the urban population lives in slums and by 2050, Africa’s urban dwellers are projected to have increased to 1.2 billion.

Informal settlements provide much-needed affordable housing in growing cities, but they exist in a legal ‘grey’ space. Integrating existing informal or unregulated settlements within the city’s formal jurisdiction and improving them is an important way of maintaining residents’ social and economic networks while reducing the need for more urban land.

b. Land degradation and livelihood strategies in peri-urban areas

Considerations for legalising informal settlements for the provision of basic services could include the Land Degradation Neutrality (LDN) Framework as an alternative solution for the provision of livelihoods, and as such create a new relationship between rural and urban areas. The WRI Ross Center for Sustainable Cities’ Working Paper on Towards A More Equal City Upward and Outward Growth makes a point on the importance of livelihood strategies in peri-urban locations and that a displacement of low-income informal settlements dwellers to peri-urban areas only with the provision of housing – but without the availability of urban services or economic opportunities – is not effective, because new housing on the city’s periphery may do little to alleviate poverty or improve well-being.

c. Secondary Cities, intermediary cities and rural urbanisation

Cities Alliance defines secondary cities as having a population range of 100,000 to 2.5 million.

The three broad types of secondary cities are distinguished as follows:

1. Sub-national regional urban centres of administration, manufacturing, and agricultural development.
2. Clustered secondary cities, which develop on the periphery of metropolitan or urban regions and take the form of new towns, spill-over growth centres, and linear cities. These may also include migrant and refugee cities.
3. Corridor secondary cities developed along major transportation corridors. (Roberts 2014)

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In rural areas especially, villages, intermediate towns and secondary cities can provide basic services, healthcare, amenities and education for the rural population; they can function as markets for the surrounding region and can be a crucial factor in ensuring food security. As such, they attract rural migrants, looking for the advantages of small and intermediate towns. The role of small and intermediate agglomerations can, thus, be a significant factor for linking rural and urban areas, and for bridging the urban-rural gap.

Intermediate towns are often more accessible to rural populations, acting as a bridge between them and larger cities. UN-HABITAT recognises that many of these secondary cities, particularly in sub-Saharan Africa, are struggling to manage the challenges of urbanisation, such as attracting investment and meeting the demand for housing, land tenure, infrastructure and basic urban services. Often, they are poorly managed, have weak communication systems within and between them, struggle to create and retain jobs, have high levels of unemployment, and find it difficult to diversify and strengthen their economies and retain capital.111

Investment in smaller cities may prove critical to counterbalance informal settlement populations, rural-urban migration to megacities and to regain developmental equilibrium between rural and urban areas. Polycentric national and regional approaches to development may need to be strengthened so as to create successful rural urbanisation.


D2. A POSSIBLE WAY FORWARD

Whilst acknowledging that the alleviation of poverty and informal settlements has been a subject of multilateral agreements and national government action for decades, recent developments in technology, ICT and socio-economic trends such as the revival of the circular economy, can bring improvements to current conditions and to the supply chain between rural and urban economies.

a. Increase connectivity through infrastructure

i. Mobility, secondary roads, transport and ICT connections (WRI)113

Existing mobility programmes in successful cities can be extended to secondary and rural areas. In particular, public transport interchanges, various modes of communication through integrated public and private-partnership for transport services to integrated and inclusive planning for walking, cycling and wheeling can improve connectivity between urban and rural areas.

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112 Roberts, B (2014) Cities Alliance, Managing Systems of Secondary Cities: Policy Responses in International Development, Fig 2.3
Sustainable urban mobility provides efficient access to goods, services, job markets, social connections\textsuperscript{114}; it is a prerequisite for sustainable local trade and economic exchange between rural and urban areas.

\textbf{ii. Secondary roads}

Secondary roads in particular, can act as conduits for core services and infrastructure in rural and urban areas. The arterial or secondary road system – which is where core urban trunk infrastructure, such as water pipelines, sewers, stormwater drains, and public transport are located – is largely undersupplied in sub-Saharan African and Asian cities.\textsuperscript{115}

Primary roads are the responsibility of central governments, whereas tertiary local roads are often provided by private sector developments under the jurisdiction of local municipalities. Greater consideration needs to be given to regional and national planning strategies of primary and secondary infrastructure, including roads, in order to improve connectivity between rural and urban areas.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig9.png}
\caption{Percentage of rural population living more than 2km from a road in The Global Roads Inventory Project (GRIP 2018) dataset © Office for National Statistics, UK (ONS)}
\end{figure}

\textbf{iii. ICT and ‘soft’ infrastructure}

In addition to physical connectivity, there have also been recent advancements in the provision of ICT and basic technology services, which are essential to the economy and to an improved quality of life in the modern world. Such advances have the power to enhance economic, social and environmental links between urban and rural areas. The Internet of Things and digitalisation are changing social relationships as well as the economy, given that they constitute economic drivers which are no longer solely dependant on industrialisation.

With poor access to national and global infrastructure services and networks, a lack of capital and skills, and the use of low-level technologies, many secondary cities are not in a position to engage effectively in the information

\footnotesize\textsuperscript{114} UN-Habitat (2016), World Cities Report 2016, p.28
Governments may consider prioritising investment in developing ICT systems and networks, and in soft infrastructure support, such as education and training of SME and micro-business networking.

b. Sustainable resource management and circular economy opportunities

In the search for alternative economic growth models in arid, semi-arid and dry sub-humid areas with limited natural resource availability, the capacity to sustainably manage natural resources, which are available in situ and/or resulting from agricultural activities, as well as the ability to sensibly manage municipal waste, can prove a driving force for change.

i. UNCCD recommendations on transboundary natural resource management

The UNCCD Convention, in Article 11 on Sub-regional and Regional Action Programmes, recommends agreed joint programmes for the sustainable management of transboundary natural resources, scientific and technical cooperation, and strengthening relevant institutions. Traditional paradigms of natural resource management in arid and semi-arid regions have declined rapidly over the past forty years due to the impacts of modernisation and industrialisation. Nevertheless, agricultural productivity of some cultivars, such as date palm, is on the increase. However, traditional processes connected to the utilisation of date palm waste are no longer in use, and at times this date palm waste is landfilled in forty-six countries currently cultivating date palms in arid or semi-arid climates.

The UNCCD recommendations on transboundary natural resource management in the context of poverty alleviation, desertification and drought as well as raising awareness of circular economy benefits and technological advancements has the potential to achieve a regional and transformative sustainable development transition, leading to economic diversification and to the provision of alternative livelihoods.

A transboundary approach to natural resource management, across a range of renewable resources available in geographical subregions, offers a capacity of scale required for investment and, in particular, can foster the implementation of Sustainable Development Goal 17.6 on technology collaboration:

17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.

The North-South collaboration can offer access to scientific laboratories and technology needed to assess the capacities of existing materials in the geographical South that are no longer in economic circulation. The European Union is currently a world leader in the circular economy transition and adapting to the local context circular economy. The success stories of the geographical North, combined with the adaptation of traditional practices and modern technology has a potential for a transformative sustainable transition towards a green economy.

ii. Circular economy and jobs

According to the ILO – “World Employment and Social Outlook 2018: Greening with jobs” the adoption of more sustainable agricultural policies can create wage employment in medium and large organic farms, and allow smallholders to diversify their sources of income through a transition to conservation agriculture. This can occur in parallel with embracing a circular economy. Circular economy emphasises the reuse, recycling, remanufacture and repair of goods and would create around 6 million new employment opportunities across the world as such actions replace the traditional model of “extract, make, use and dispose”. Notably, it means a reallocation from the mining and manufacturing sectors to waste management (recycling) and services (repair, rent). The ILO expects global employment growth services and waste management to create up to 45 million jobs in total.

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iii. Biological waste management and re-introduction of circular food systems between cities and rural areas

The existing linear model of mass food production and lack of systemic approach to biological waste within the city’s boundaries offers opportunities for the re-introduction of the circular economy model. In this instance, ‘re-introduction’ refers to an acknowledgement that historically, cities and rural areas recycled their waste, and in some cases, such as in the Middle East, the circular economy model was in existence for around 8,000 years.

![Circular economy model of date palm industry is 8,000 years old. Recycling of all date palm tree components and by-products are in decline since 1970 in the Middle East © Sandra Piesik](image)

Fig 10. Circular economy model of date palm industry is 8,000 years old. Recycling of all date palm tree components and by-products are in decline since 1970 in the Middle East © Sandra Piesik

Today, in cities, less than 2 per cent of the valuable biological nutrients in food by-products and organic waste (excluding manure) is composted or otherwise valorised.122

Cities have a unique opportunity to spark a transformation towards a circular economy for food, given that it is expected that, by 2050, 80 per cent of all food consumed will be in cities.123

It is recommended that cities re-establish food supply chains with their surrounding peri-urban areas, estimated at around 20km from city boundaries and rural areas. Circular economy models can extend to water management shared by rural and urban areas, bio-composting to SME enterprises aimed at production, food processing, sales and the elimination of food waste.

The Ellen MacArthur Foundation’s report on “Cities and Circular Economy for Food” (2019) estimates that realising the vision of a circular economy for food would result in economic, societal, and environmental benefits. The benefits to cities of achieving two of the ambitions together, that is: i) sourcing food regeneratively and locally where appropriate; and ii) making the most use of the food, would generate benefits worth USD 2.7 trillion annually by 2050, and reduce greenhouse gas emissions by 4.3 billion tonnes of CO2. An economic opportunity of over USD 700 billion a year can be realised by reducing edible food waste and using organic materials to produce new products.124

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iv. “Zero waste to landfill” for urban and rural areas

The flow of building materials, water, electronic waste, and food, can be reconfigured to avoid resource waste. Urban areas offer the ideal environment to both reap the benefits and iterate on the challenges of such models. Cities around the world are already experimenting with interventions that leverage synergies across different sectors to foster symbiotic relationships in the consumption process, and as a commitment to circular economy concepts in urban planning, some have gone as far as pledging “zero waste to landfill” as a strategic goal for their city. The “Zero waste to landfill” concept can also be extended to the agricultural sector and rural areas and include plastic waste, circular procurement and the reintroduction of natural materials from rural or forest ecosystems to construction and product design industries.

v. Renewable energy for rural and peri-urban areas

Cities are crucial to the world’s transition to a low-carbon economy, accounting for 65 per cent of global energy use, and 70 per cent of man-made carbon emissions. Almost two billion people in developing countries – one third of the world's population – have no access to electricity. Fuelwood, agricultural residues, human power and draft animals continue to be the primary energy resources for millions of rural families. Finding alternative sources of energy that are both economical and environmentally friendly is crucial for increasing agricultural productivity and improving the quality of life in rural communities.

The global deployment of renewable energy is expanding. Focus on renewable energy provisions can bring new revenue sources, and can increase the tax base for improving service provision in rural communities. It can also generate extra income for land owners.

For example, farmers and forest owners who integrate renewable energy production into their activities have diversified, increased, and stabilised their income sources. Renewable energy can provide remote rural regions with new jobs and business opportunities, and notably the option to produce their own energy (electricity and heat in particular), rather than importing conventional energy from outside. Being able to generate reliable and cheap energy can trigger economic development.

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125 Ellen MacArthur Foundation (2019) Cities and Circular Economy for Food, p.17 Fig. 2
129 OECD Linking Renewable Energy to Rural Development, p 1
vi. Technology development and transfer – research, development and demonstration (RD&D) – innovation and adaptation of traditional knowledge

In line with the UNCCD’s 3rd Scientific Conference of 2015, in Cancun Mexico, “Combating desertification, land degradation and drought for poverty reduction and sustainable development – the contribution of science, technology, traditional knowledge and practices”, the role of RD&D and innovation in the context of higher education and private sectors is critical, as is financial support from national governments and international financial mechanisms in this area.

Underinvestment in upscaling local technologies, both in agricultural practices as well as in the construction industry, sometimes results in the introduction of foreign technological solutions that are often unsuited to local conditions. The contribution of science and technology to the adaption of traditional knowledge, combined with hybrid solutions of the best available modern technology can offer long-term socio-economic benefits and environmental sustainability.

The biggest opportunity in city planning in desert regions is the emergence of ‘hybrid neighbourhoods’ that are able to adapt traditional principles of desert cities and agricultural practices with new technology and amenities, whilst meeting the social aspirations of its population, in particular the younger generation. This holistic concept of spatial and rural development, once practiced, could bring a new dimension to rural-urban linkages.

All three Rio Conventions, including the Paris Agreement and the 2030 Agenda for Sustainable Development make references to technology development and transfer, and this is still very much relevant in the light of the Fourth Industrial Revolution.

vii. Digitalisation for development

Satellite technology and remote sensing to gather spatial data can have multiple applications. On the one hand, it is possible to measure a city’s expansion, and on the other hand, assess land-use and degraded land areas. This can expedite city planning and controlled expansion, especially in the absence of land-use maps.

The WRI recommends that satellite imagery interpretations be matched with fieldwork in a sample of locations to understand their accuracy levels. Increasingly, in China, India, Tanzania, and some Latin American countries, drones are being used as a low-cost way to tackle the otherwise expensive exercise of land mapping. This has allowed cities to monitor development patterns, complete their land registries, enforce land-use regulations, and collect tax revenue. Detailed drone images, combined with satellite imagery generated over time, can help monitor levels of service provision in existing informal settlements, analyse growth patterns, and inspect the condition of open spaces and environmentally vital areas.130

The European Commission advocates Digitalisation for Development (D4D) in reducing poverty through technology, whilst recognising the speed at which the digital economy is unfolding. The EU recognises the huge potential of digital technology and services in the achievement of the SDGs, provided that action is taken to address the disruptive effects of technologies. These effects include: the automation of jobs impacting on employability, digital exclusion and inequality, cybersecurity, data privacy and regulatory issues. The EU also states that any digital strategy must be fully in line with, and contribute to, the realisation of the 2030 Agenda for Sustainable Development. This is notably with reference to: SDG 4 on quality education, SDG 5 on achieving gender equality and empowering all women and girls, SDG 8 on decent work and economic growth, and SDG 9 on industry, innovation and infrastructure. Moreover, it is noted that if the SDGs are to be achieved by 2030, a strengthened global, national, regional and local partnership is needed between governmental, scientific, economic and civil society actors.131

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Fig 12. High resolution poverty mapping in the Philippines © Thinking Machines. In 2015, the Government in the Philippines estimated that 5 per cent of families in the province of Pampanga were poor. Thinking Machines applies a poverty-mapping technology to satellite technology estimating more accurate wealth for areas within 18 sq km. It is a positive example how digitalisation can help in poverty alleviation.

E. FINANCIAL CAPITAL – ENABLING ENVIRONMENTS FOR THE GREEN ECONOMY TRANSITION

A green economy is a benefit for all. Financing a just transition to green jobs and creating enabling environments for sustainable growth in peri-urban areas, including incentives and investment in agriculture, are important factors for the successful expansion of cities in coexistence with prosperous rural areas.

Sub – themes:
- Micro-economy.
- Sustainable micro-finance.
- Enabling environments and tax incentives.
- Investments.

All initiatives for enhanced dynamics in rural and urban areas can only be made possible with adequate provision of sustainable finance. There is sufficient evidence for the need for urgent action, and this can only be mobilised and delivered with appropriate finance.

Climate Policy Initiative’s 2017 edition of the “Global Landscape of Climate Finance (GLCL)” reported that global climate finance flows surged to USD 437 billion in 2015, before falling by 12 per cent to USD 383 billion in 2016, of which USD 242 billion were from private actors, and USD 141 billion were from public actors.133

The GLCF recommends a broader scale of investments across all sectors of the economy. For the energy sector, including energy use in power, transportation, and buildings, the needs total over USD1 trillion per year through 2050. Even more funds are needed in agriculture, forestry, water, and waste to enable a low-carbon transition, while adaptation finance needs are also pressing in order to minimise the costs of climate impacts that are already locked in.134

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133 Bucher, B.K, Oliver, P, et al. (2017) Climate Policy Initiative’s, Global Landscape of Climate, p. 1
134 Bucher, B.K, Oliver, P, et al. (2017) Climate Policy Initiative’s, Global Landscape of Climate, p. 1
The rural-urban relationship entails cross-sectorial classification of adaptation and mitigation. However, with a broken link between the two, adaptation (process-based approaches) may need to be emphasised over mitigation (quantitative-based approaches). Communities and territories need to re-learn how to coexist, which is itself a process-based approach.

The GLCF estimates that between 2015 – 2016 USD 382 billion was spent on mitigation, and only USD 22 billion on adaptation. With current global trends on re-direction of efforts towards eco-systems-based adaptation and adaption in general, this can be an opportunity for additional investment in peri-urban areas, in particular, to enhance urban and rural connectivity through land, nature-based solutions and bio-economy.

Sources of public finance vary from development finance institutions to national, bilateral and multilateral finance, including governments, agencies and climate funds. Sources and intermediaries of private climate finance are derived from project developers, corporate actors, households, commercial financial institutions, private equity, venture capital, infrastructure funds and institutional investors.135

Green finance, offering investment in environmental technology, infrastructure and services, sustainable agriculture, circular economy transition, RD&D and innovation is critical for social, environmental and economic sustainability of hinterlands. Supporting local micro-economies through micro-finance, particularly in rural areas, intermediate and secondary towns, cooperation with investment and development banks, private and public sector initiatives, tax free zones, tax incentives, support for business and micro and social-enterprises – can act as enablers for a green economic transition between rural and urban areas delivering “build together, benefit together” approaches.

**LANDSCAPE OF CLIMATE FINANCE IN 2015/2016**

Fig 13. Climate Policy Initiative’s, Global Landscape of Climate Finance (2017), Landscape of Climate Finance in 2015/2016. Mitigation spending USD 382 billion, adaptation spending USD 22 billion.136

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135 Bucher, B.K, Oliver, P, et al. (2017) Climate Policy Initiative’s, Global Landscape of Climate, p. 6
136 Climate Policy Initiative’s, Global Landscape of Climate Finance (2017), p.3
2. CONCLUSION

The IPCC Special Report on Global Warming of 1.5 ºC (2018) on the impact of global warming of 1.5 ºC above pre-industrial levels, and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty137, provides an apocalyptic, science-based picture of the planet resulting from global warming.

Rural-urban dynamics offer a meeting point for a systemic change in our efforts to combat climate change and developmental patterns. The sustainable development agenda positions people at the centre of a ‘green transition’. The fight to alleviate poverty is an ongoing challenge that is often met in peri-urban areas. It might be that the peri-urban areas could become catalysts, and a testing ground for developmental change through local action programmes, new approaches to governance, land tenure regulation and policy implementation. Providing low-cost housing for the global poor in peri-urban areas will not be sufficient; holistic approaches to livelihood strategies including, but not limited to, sustainable agriculture will need to be considered. One of the biggest socio-economic and environmental opportunities for cities and rural areas lies in integrated food systems. Sustainable provision of food, agricultural biodiversity of local produce and re-establishment of local food chains can enhance connectivity between the city and its surrounding rural areas.

The sustainable management of natural resources, including municipal waste, through the circular economy can offer opportunities for new jobs and the emergence of micro-industries. ‘Zero waste to landfill’ strategies offer a win-win scenario for both rural and urban areas. Capitalising on a growing momentum behind the circular economy movement, especially in the European Union and Asia, can bring developmental benefits for the geographical South. Not all strategies require North-South input. Many countries in arid regions have developed their own holistic waste management strategies over millennia, which sometimes stopped being practiced due to globalisation. Re-engaging with these traditions through cross-sectorial strategies, innovation and adaptation processes, may be the most cost-effective way to alleviate poverty, whilst preventing land degradation.

Arid, semi-arid and dry sub-humid regions have scarce resources, therefore transboundary natural resource programmes may prove essential to deliver innovation in waste management due to the economy of scale. Digitalisation for development, satellite technology and remote sensing are going to become important tools in expediting transformative changes in cities and rural areas, whilst meeting the social aspirations of the global youth.

In line with the recommendations of all three Rio Conventions, the Paris Agreement and the Agenda 2030 for Sustainable Development, all-inclusive partnerships at all levels of engagement from international organisations, sub-regional programmes, national and local initiatives are encouraged. Identifying rural-urban dynamics in the Nationally Determined Contributions will foster implementation processes, including the provision of funding.

Contained in the 1994 text of The United Nations Convention to Combat Desertification references to the National Action Programmes (Article 10), Sub-regional and Regional Action Programmes (Article 11)138 including action programmes for individual continents forming Annexes to the Convention remain valid and helpful tools for rural-urban dynamics action programmes.

3. FIGURES CREDITS

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Fig 4. UNDP 2018 Global Multidimensional Poverty Index (MPI). 2018 MPI estimates, by region (millions). (Redrawn)142

137 IPCC (2018) Special Report on Global Warming of 1.5 ºC
140 UNCCD (2017) Global Land Outlook, p.56
141 The United Nations Convention to Combat Desertification (1994), Article 1, p.4
Fig 5. The International Standard Industrial Classification of All Economic Activities (ISIC) of 2008, is a United Nations industry classification system. Industrial sectors are important references for a diverse jobs and skills creation in urban, peri-urban and rural areas.


Fig 9. Percentage of rural population living more than 2km from a road in The Global Roads Inventory Project (GRIP 2018) dataset © Office for National Statistics, UK (ONS)

Fig 10. Circular economy model of date palm industry is 8,000 years old. Recycling of all date palm tree components and by-products are in decline since 1970 in the Middle East © Dr Sandra Piesik

Fig 11. Ellen MacArthur Foundation (2019) Cities and Circular Economy for Food, The flow of materials in the food system is overwhelmingly linear. In the linear food system, a very high proportion of food flows into cities where it is processed or consumed, creating organic waste in the form of discarded food, by products or sewage. In cities, only a very small proportion (<2%) of the valuable nutrients in these discarded organic resources gets looped back to productive use. 145 Source: FAOSTAT, Food Balance Sheets (2013); FAOSTAT, livestock manure (2013); WBA, Global Bioenergy Statistics (2017); The World Bank, What a Waste (2012); Scialabba, N., et al., Food wastage footprint: impacts on natural resources (2013), United Nations University, Valuing human waste as an energy resource (2015), Cities and the Circular Economy for Food analysis

Fig 12. High resolution poverty mapping in the Philippines © Thinking Machines. In 2015, the Government in the Philippines estimated that 5% of families in the province of Pampanga were poor. Thinking Machines applies a poverty-mapping technology to satellite technology estimating more accurate wealth for areas within 18 sq km. It is a positive example how digitalisation can help in poverty alleviation.

Fig 13. Climate Policy Initiative’s, Global Landscape of Climate Finance (2017), Landscape of Climate Finance in 2015/2016. Mitigation spending USD 382 billion, adaptation spending USD 22 billion. 146

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5. APPENDIX 1 - THEMATIC QUESTIONS FOR A HIGH-LEVEL POLITICAL FORUM MEETING

Natural Capital Challenges

- Existential co-dependency of cities on rural areas
- Land degradation and food production

Question 1: How can we strengthen rural-urban development through sustainable food supply chains?

Question 2: Could we consider extending the Land Degradation Neutrality Framework to peri-urban areas in order to develop joint programmes aimed at the protection of arable land?

Human Capital Challenges

- Rural – Urban dynamics and poverty alleviation
- Demographic shifts, globalisation and migration
- Provision of skills and green economy

Question 3: How can migration work for all, to benefit rural and urban areas?

Question 4: What kind of training programmes could be provided, and in what sectors, to train people in new skills, especially the youth and women?

Social Capital Challenges

- Governance and insufficient land regulations
- Planning
- Decentralisation and local policies

Question 5: How best to introduce or update land tenure regulations in order to create co-benefits for all stakeholders?

Question 6: Can planning policies embrace land-use in both urban and rural areas?

Question 7: How best to implement decentralisation and to empower local governments in participatory programmes between rural and urban areas?

Manufactured Capital Challenges

- Affordable housing and legislation of informal settlements
- Increased connectivity through infrastructure
- Sustainable management of natural resources through the circular economy
- Technology development and transfer

Question 8: Is legalising informal settlements the best way forward?

Question 9: How could Land Degradation Neutrality and food security be used for improvement of livelihoods for people living in informal settlements?

Question 10: How best to improve connectivity between rural and urban areas through the provision of hard and soft infrastructure?

Question 11: Is transboundary management of natural resources through the circular economy an attractive proposition for alternative livelihoods and job creation?
Question 12: How best to facilitate “zero waste to landfill” strategies both for cities as well as rural areas?

Question 13: Do you see opportunities in digitalisation for development as a tool for economic growth between rural and urban areas?

Financial Capital Challenges

- Financing the green economy between rural and urban areas

Question 14: What kind of short-term and long-term financing schemes could be recommended to enhance the micro-economy of rural and urban areas?

Question 15: What kind of immediate actions could local authorities take to enhance the existing relationship between rural and urban linkages?