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Urbanisation-sensitive Programming:

An Introduction to the Approach, Model and Tool

Urbanise your thinking

by 2050

68%
urban

100%
urbanised

Urbanisation as a Process

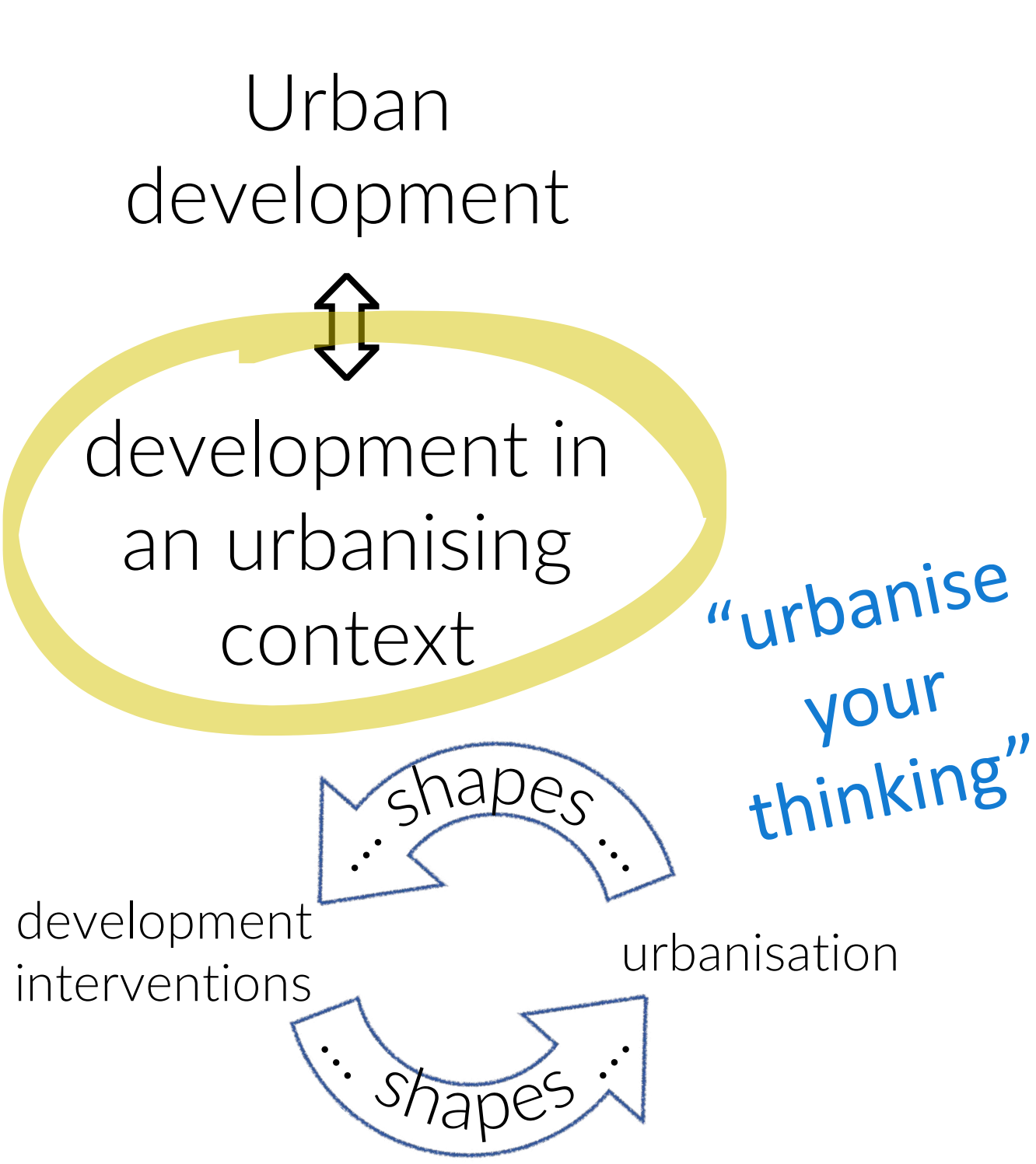
Urbanisation is a process which is triggered by the development of urban centres.

However, urbanisation extends far beyond the margins of cities – it affects social, political, economic and cultural systems across entire regions and nations.

Hence, even people living in remote rural areas are affected and influenced by urbanisation and hence urbanised – even with no city visible at the horizon.

Urbanisation influences people's minds and desires: urban-generated images and opportunities shape the worldview and desires of everybody. It affects the economies of rural, peri-urban and urban places alike; economic growth is mostly driven by urban development and growth, also in rural ares. Movements are determined by urban networks, be it to live in or visit cities to trade, work, get access to services, etc.

Hence, while by 2050 “only” 68% of the world population are expected to live in urban areas, urbanisation will extend to 100%.



"urbanise your thinking"

Urbanisation and Development

Developing growing urban areas is the focus of developmental efforts, involving planning, designing, building, and managing cities to become more efficient, sustainable, healthy, and inclusive.

However, urbanisation will soon impact 100% of the global population and territory, whether they are classified as urban or not, making any development take place in an urbanising context.

This means that the context of any development intervention is rapidly transforming and changing.

The relationship between urbanization and development is reciprocal: development is influenced by urbanization, and development interventions in turn influence and shape the urbanisation process.

Urbanization is not just a sector, a transversal topic, or a working area; it is a universal context that impacts and alters development work, shaping its nature and outcomes.

This necessitates a shift in perspectives and modes of thinking.

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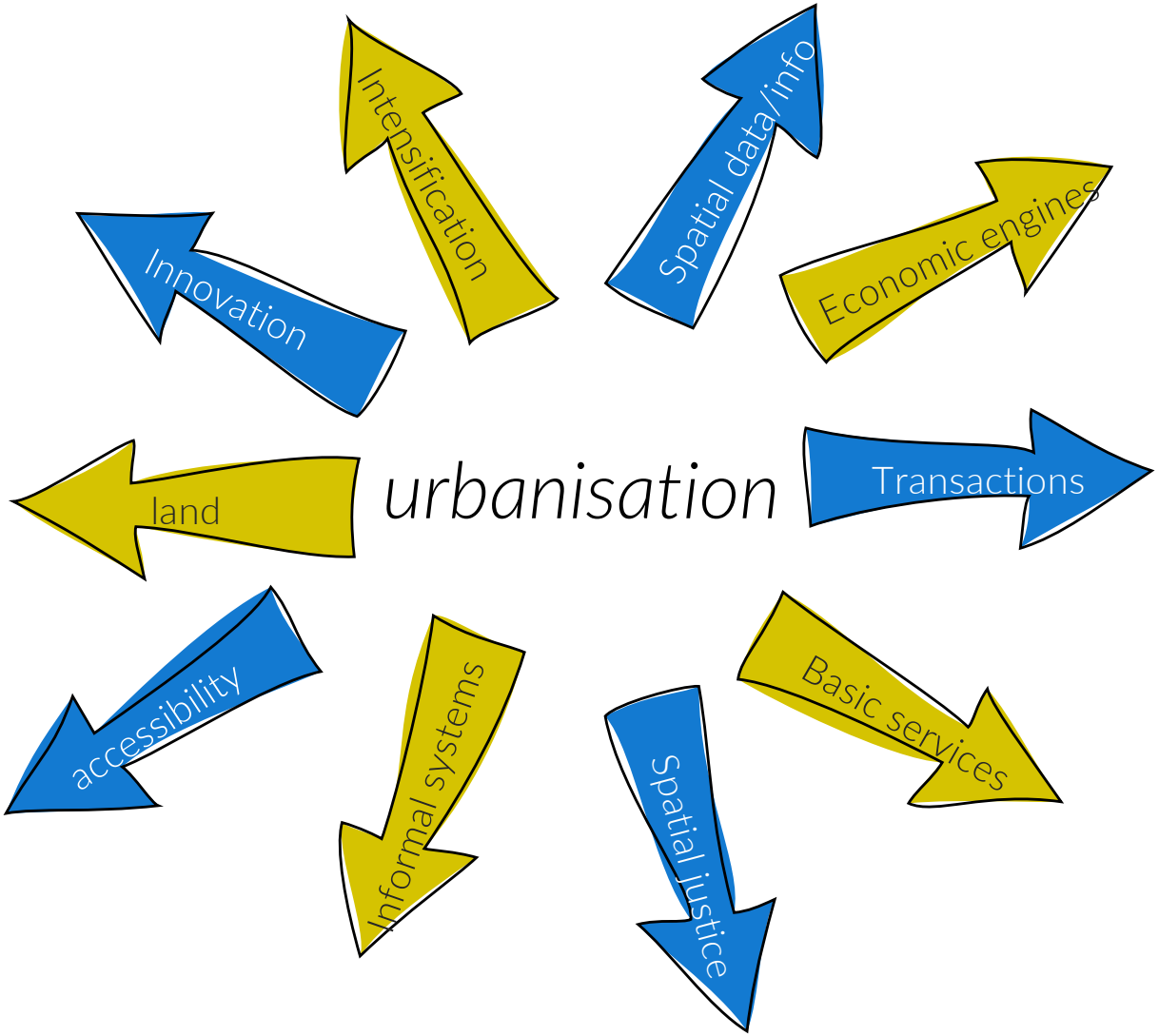

10 Dimensions Manifesting Urbanisation

The approach is based on the identification of ten dimensions through which urbanisation occurs. Essentially, these dimensions would not manifest themselves prominently if urbanisation was not taking place.

Urbanisation can also give these dimensions a new perspective. For example, while basic services could be provided independently of urbanisation, the impact of urbanisation changes the way these services are delivered. Land has always been an important resource, but in rural areas, its value is based on agricultural production factors like fertility. In contrast, in urban areas, the value of land changes as it becomes a purely locational factor, determining access to the urban system.

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Actors	→	Processes	→	Manifestations of Urbanisation	→	Processes	→	Actors
– Businesses (different sizes) – Citizens/ residents/ inhabitants & families/ households – Government units & agencies (on different levels) – NGOs, CSOs, community organisations – International actors/ development actors – Informal institutions		– Decentralisation, democratisation, good governance, rule of law – Inclusion, equality, equity (gender, vulnerable groups, human rights, ...) – Migration – Climate mitigation/ adaptation – Environmental conservation – Natural resource management – Job creation & labour market – Enterprise development, private sector promotion – Market development, supply & commodity chain development – Peacebuilding – Capacity building – Organisational development – (Public) participation & inclusion – Management & planning – Accountability & transparency – Food & water security – Industrialisation, agricultural promotion – (Local) economic development – System design/ engineering – Negotiation & arbitration – Disaster management		Spatial Data/ Information Economic Engine Transactions Basic Services Spatial Justice Informal Systems Accessibility Land Innovation Intensification		– Decentralisation, democratisation, good governance, rule of law – Inclusion, equality, equity (gender, vulnerable groups, human rights, ...) – Migration – Climate mitigation/ adaptation – Environmental conservation – Natural resource management – Job creation & labour market – Enterprise development, private sector promotion – Market development, supply & commodity chain development – Peacebuilding – Capacity building – Organisational development – (Public) participation & inclusion – Management & planning – Accountability & transparency – Food & water security – Industrialisation, agricultural promotion – (Local) economic development – System design/ engineering – Negotiation & arbitration – Disaster management		– Businesses (different sizes) – Citizens/ residents/ inhabitants & families/ households – Government units & agencies (on different levels) – NGOs, CSOs, community organisations – International actors/ development actors – Informal institutions

Systems

Education, Health, Government (different tiers/ levels), Private sector & markets, Built infrastructure, Utility systems, Security & safety (physical, social), Civil society & communities, Cultural & religious institutions, Natural ecosystems & habitats, Mobility systems, Territorial systems, Food

Relating to Other Categories

The ten dimensions of urbanisation do not include aspects one might expect, such as “migration” or “natural resource management” or “governance”. The latter are development areas and processes, which stand in the previously mentioned reciprocal relation to urbanisation:

These processes influence the manifestations of urbanisation, and the manifestations of urbanisation influence these processes. But they are not the same – they are not a replication.

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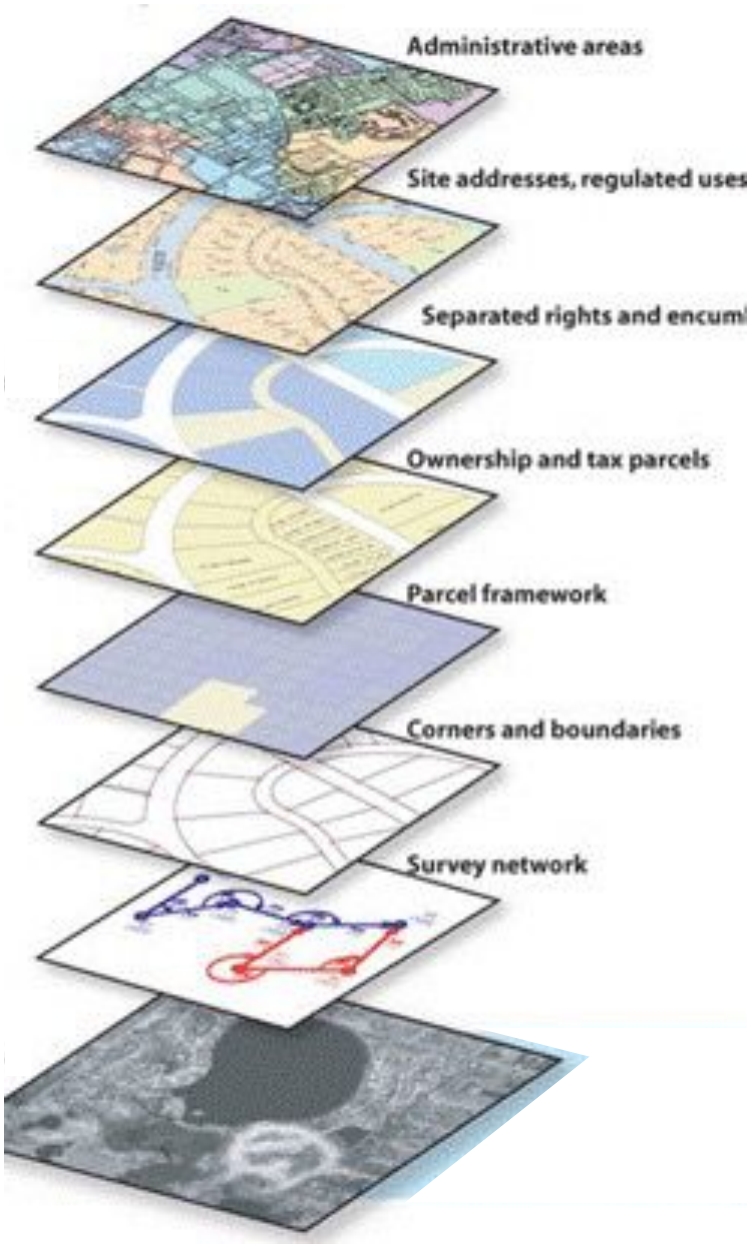
Thinking through dimensions of urbanisation



spatial data/ information

In urbanising contexts, the spatial dimension matters big time – the idea of space becomes a central category. Context can only be understood with space as its key.

It matters where things happen – location determines everything. Every situation, every action, every causality takes place somewhere.

To better understand and handle spatial morphologies and flows, it is inevitable to generate spatial data and information (i.e. to “geo-tag or geo-reference” it).

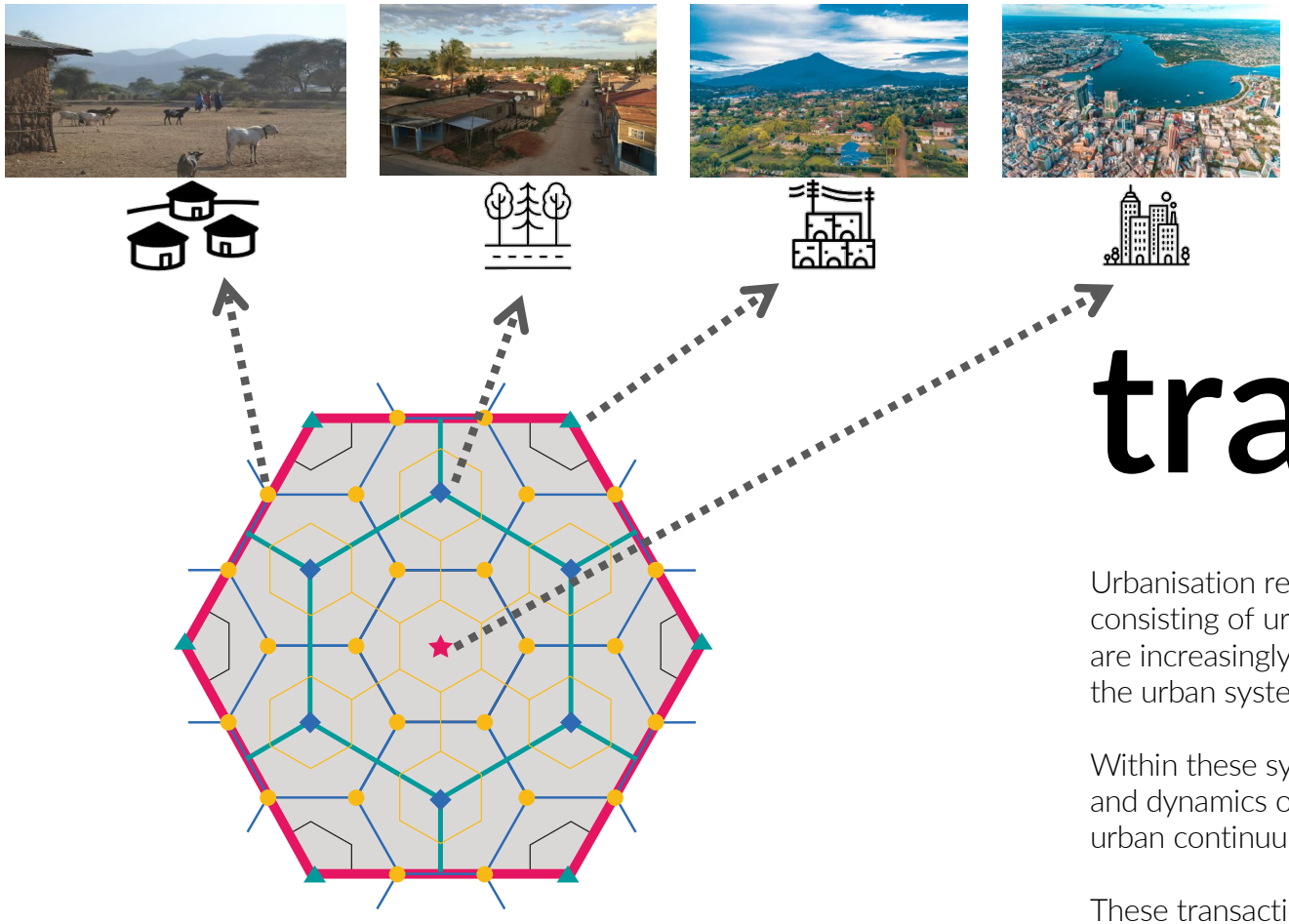
The ability and power to generate, own, manage and interpret spatial data and information is the key to knowing your place and, hence very empowering (or disempowering in the case of its absence).

economic engines

Maybe without exception in history, all significant economic growth and development has been linked to and driven by urban development and growth. Cities are the economic engines of the world.

Cities – through agglomeration effects and endogenous growth – generate an urban dividend. They are the centres and drivers of knowledge generation, the location of markets and production centres, the hubs of information, resource flows, and the cradle of social and cultural interaction.

This wealth can be a significant source to fund further urban and social development. However, while these economic engines generate wealth on a huge scale, this takes on different shapes: who participates at what terms? Who reaps a share of this dividend? As much as it can help some to accumulate significant wealth, it can also marginalise and deprive others, thus opening the inequality gap even more.

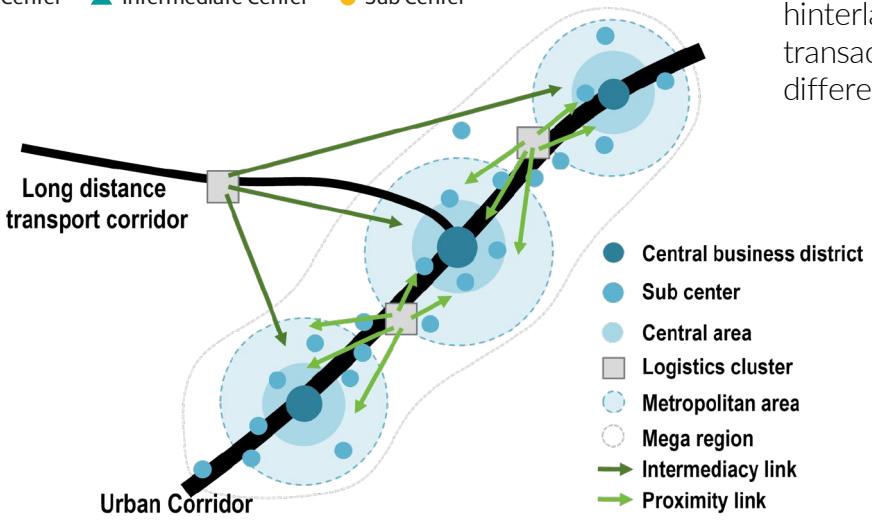


transactions

Urbanisation results in the formation of urban systems and networks consisting of urban centres of various sizes. This includes rural areas, which are increasingly influenced by the gravitation of cities and become part of the urban system as their hinterland.

Within these systems, manifold transactions occur, shaped by the structure and dynamics of the urban system. These transactions follow the rural-urban continuum and occur across different cities.

These transactions, which are mainly horizontal, occur between neighbouring entities, such as neighbouring cities or cities and their hinterlands. This spatial dynamic is a key feature of urban systems, as transactions occur mainly horizontally rather than vertically between different levels of governance in decentralization processes.



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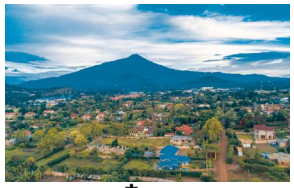


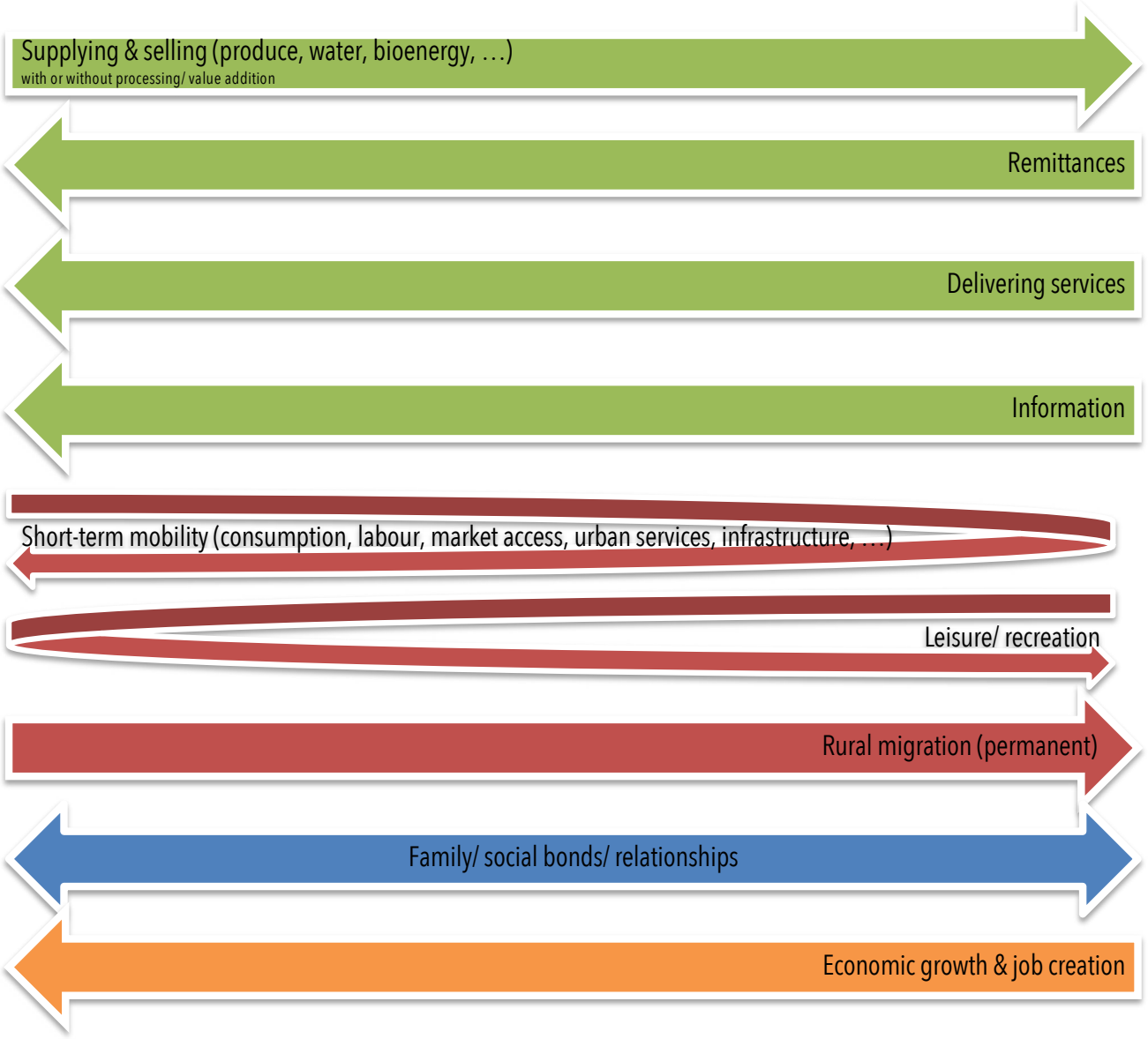

Transactions involve many different forms:
They can be of a material nature, transporting commodities and goods from rural areas to urban centres or vice-versa; they can be financial transactions (e.g. remittances), the delivery of services mostly from urban centres to their adjacent, dependent territory (hinterland) including smaller cities, as well at the flow of information, the majority of which is generated in urban centres.

Transactions also involve mobility of people in the short and long term, i.e. short-term visits for the fulfilment of a particular purpose (accessing a secondary or tertiary service institution, a market, etc) or permanent migration to an urban centre.

They may also include non-material relations, e.g. interactions and bonds between family members and other social individuals and groups.

Transactions in many places are inefficient – they harbour great potential gains in terms of increased economic value, creation of more and better opportunities, leveraging sub-optimal organisation and management, etc.

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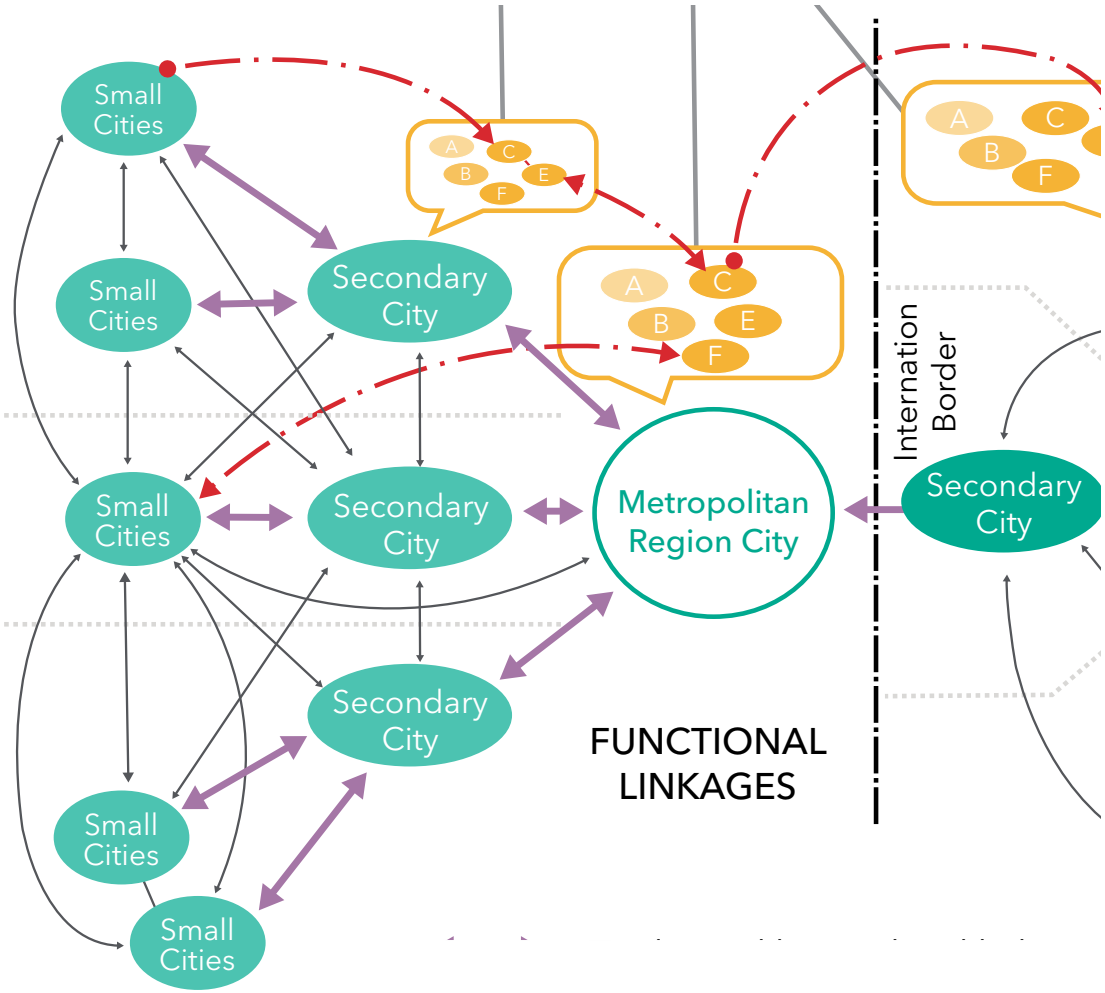


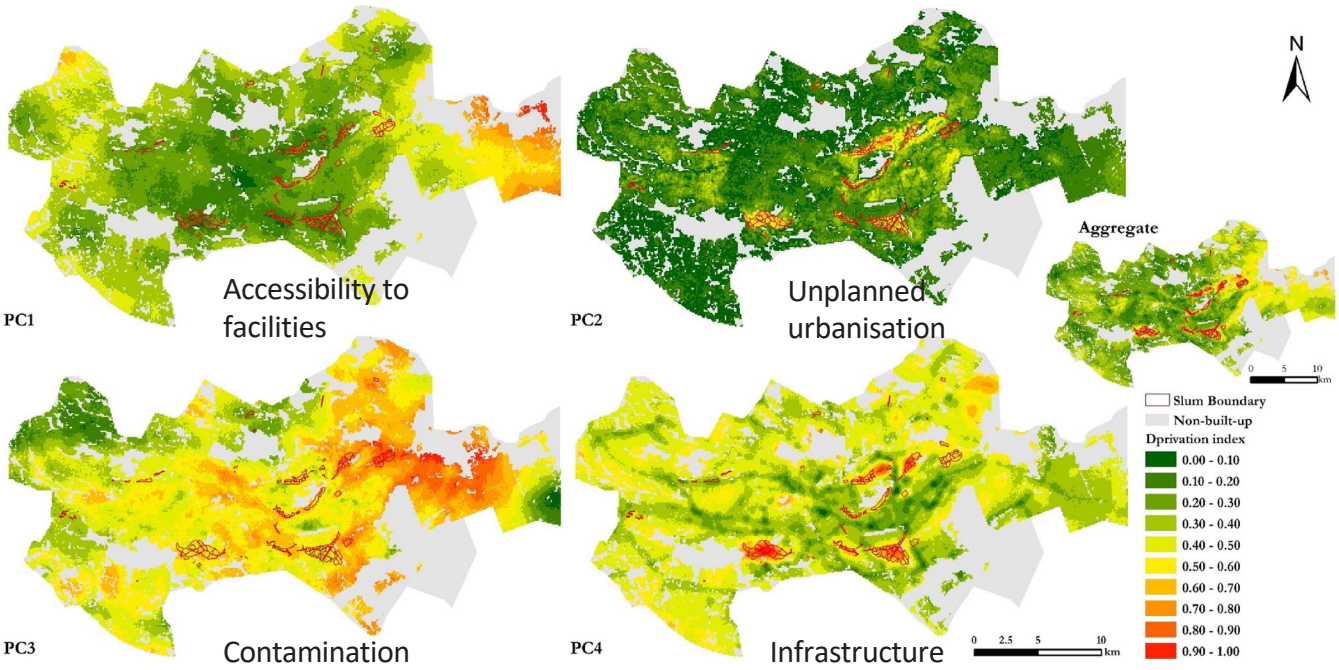
Cities Alliance (2019), Connecting Systems of Secondary Cities

basic services

While the delivery of basic services is not a field linked to urbanisation per sé, urbanisation profoundly impacts and transforms service delivery structures and processes.

Many public service systems build on the structure of urban systems. Primary, secondary and tertiary institutions are located in urban centres of specific orders and sizes.

Urban layout and morphology play a crucial role in determining the accessibility, affordability, and efficiency of services. Since service structures tend to become entrenched in initial setups and are often difficult and costly to change, urban planning, which also takes into account future situations and needs, is closely related to service design.



Leave No Space Behind

Leaving no one behind translates into leaving no space behind as an immediate pathway.

The delivery of services harbours the potential to cover different areas to varying degrees and with different levels of quality. As a result, spatial pockets of poverty can turn into areas of deprivation and neglect – often a mutually reinforcing cycle.

To address this, we need spatial data - that is, mapping of georeferenced information. This data allows us to identify how different indicators of poverty or well-being correlate in the spatial dimension.

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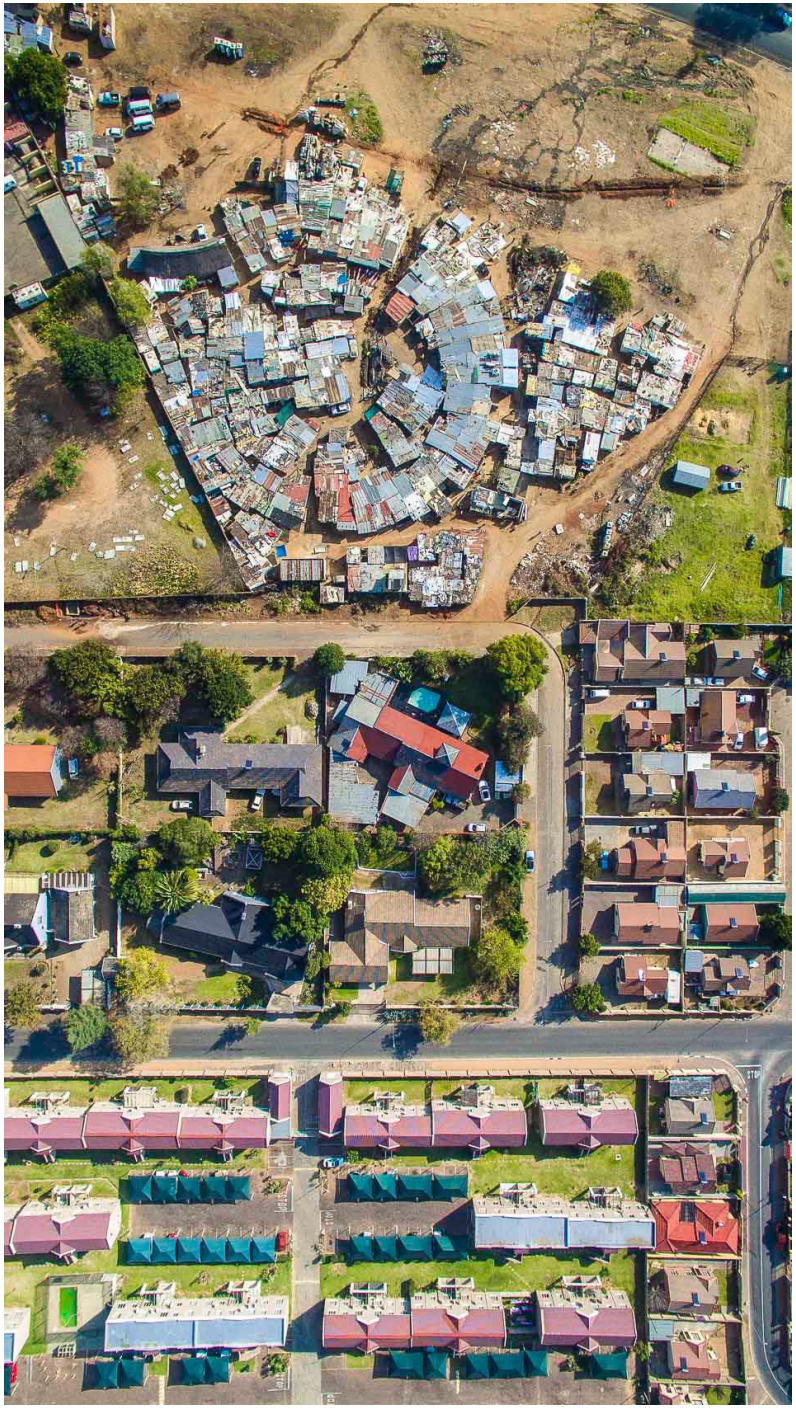
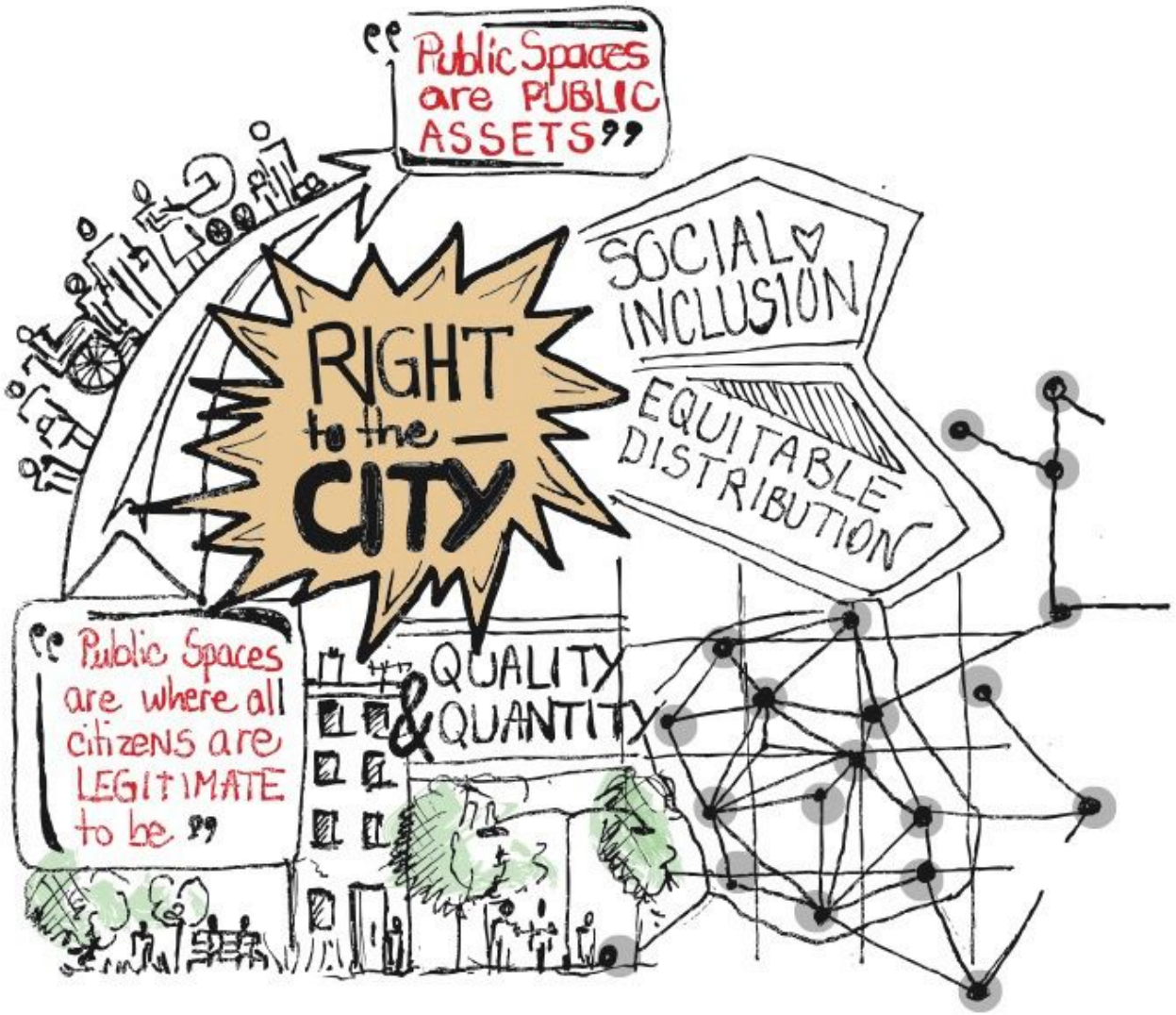


spatial justice

Spatial justice seeks to ensure fair and equitable distribution of resources, the inclusive and barrier-free access to opportunities, services and amenities in the urban fabric. Inequalities and disparities need to be proactively addressed.

It recognises that the design and management of urban (and rural) spaces significantly impact equal access and enjoyment in both ways, positively or negatively. The aim is to create inclusive environments where everyone, regardless of their socio-economic status or geographical location, has the chance to thrive and benefit from urban assets and welfare. Marginalised and disadvantaged groups require special attention in achieving this goal.



https://www.learning.uclg.org/public-space-right-city

Right to the City

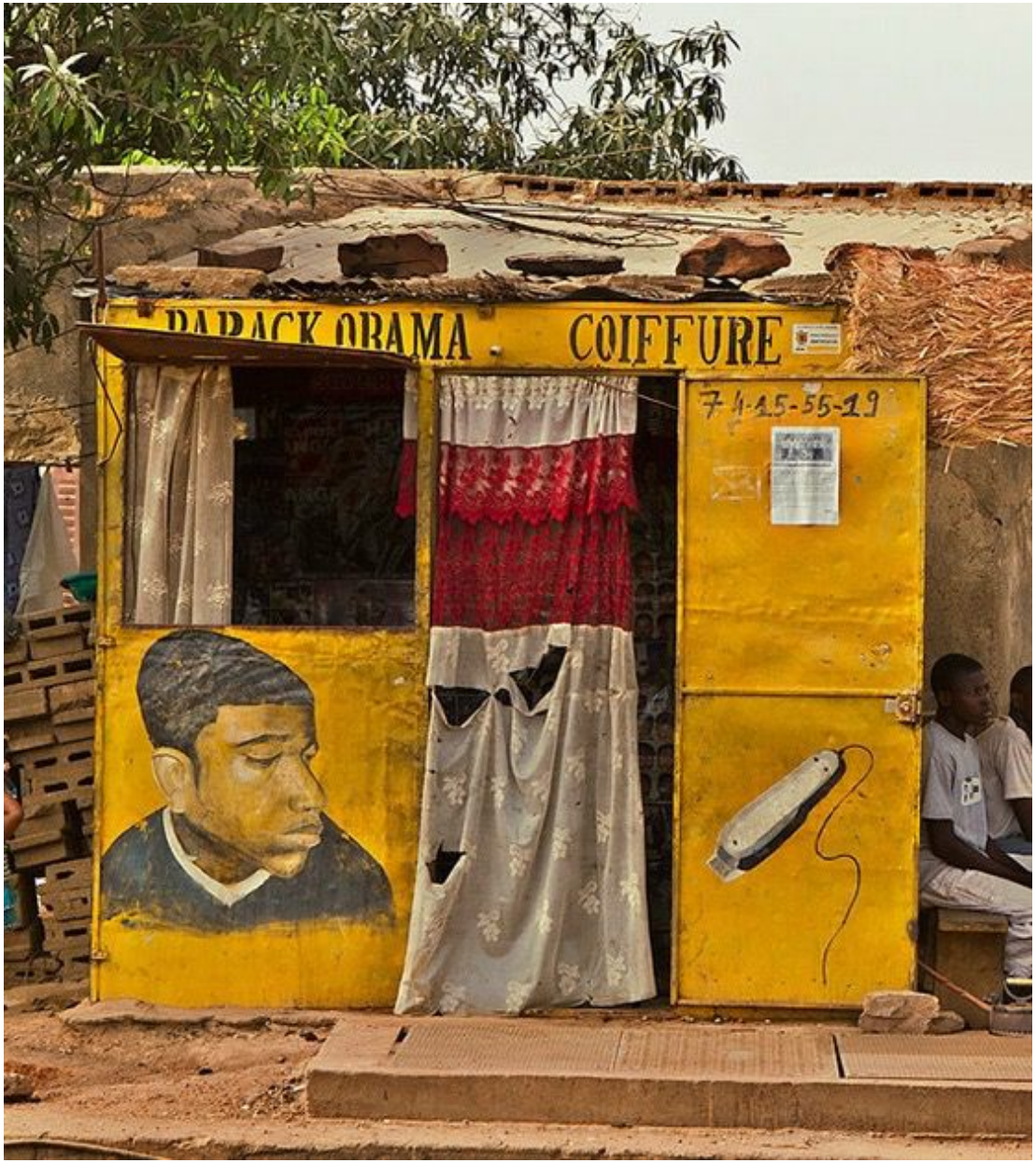
Spatial The concept of "Right to the City" is central to spatial justice and encompasses various dimensions. This includes the right to both "consume" and "produce" the city.

"Consuming" the city involves the freedom to move around the city, access its public spaces, as well as its economic, social, and cultural opportunities in an equitable and inclusive manner. It also includes enjoying the advantages and benefits the city offers.

On the other hand, "producing" the city means having a voice and involvement in urban development and the management of spaces that impact one's life. This includes matters related to residence, subsistence, mobility, and social and cultural activities.

In essence, active participation and transparent, accountable urban political, social, and economic processes are essential for realising the "Right to the City".

Key features are equitable access to resources & services, the promotion of social cohesion and economic opportunities, the creation of cultural and community spaces, sustainable and safe environments, free access to public spaces, equitable infrastructure, participation in public decision-making and the promotion of active citizenship, etc.

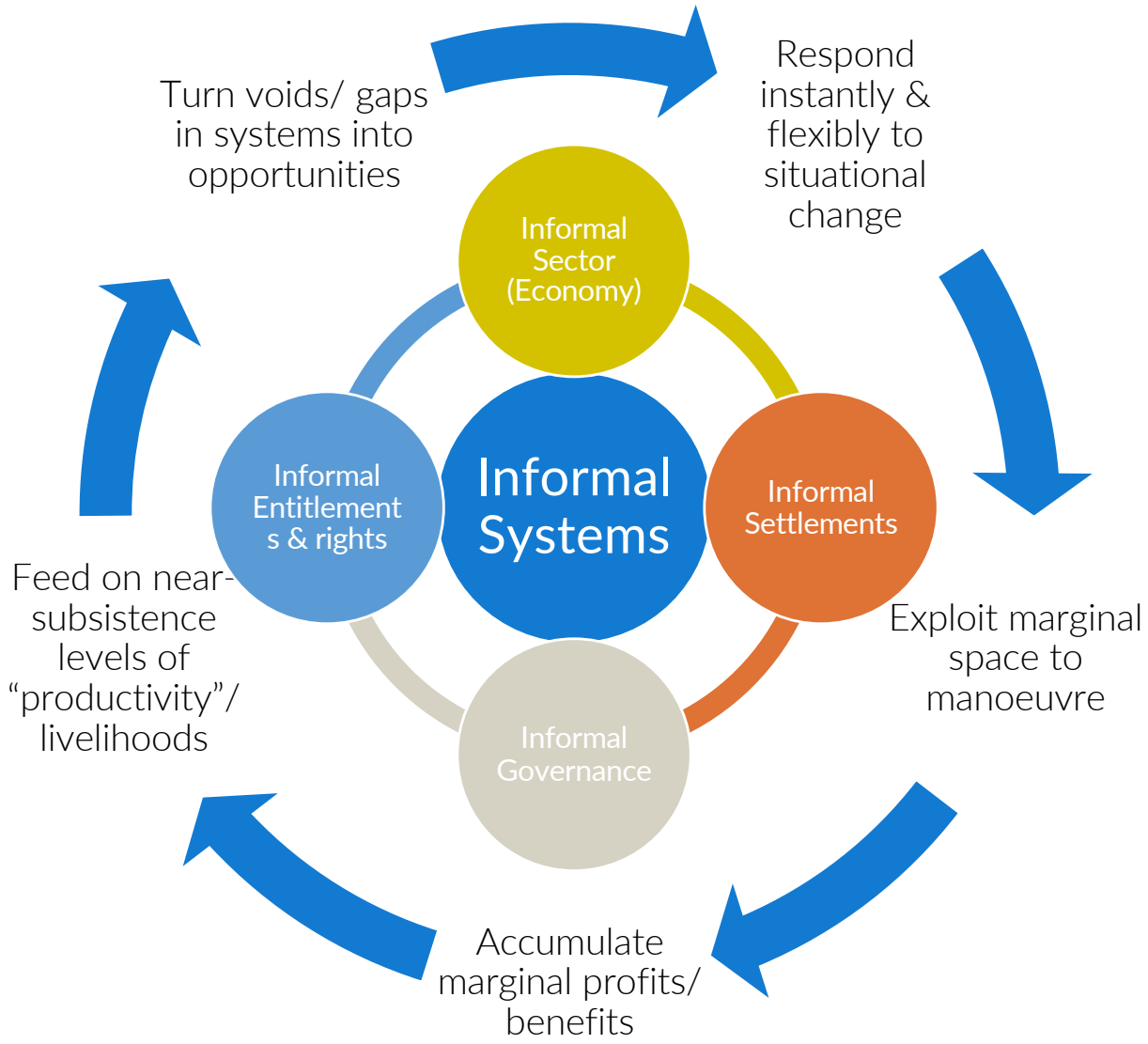


informal systems

Informality is mainly a meaningful concept in the wake of urbanisation; while rural villages, rural subsistence economies (e.g. subsistence/ small-scale farming, rural trading), etc. can be considered informal, informality is a less pertinent concept.

In the urban realm, unplanned and non-legalised settlements, unregistered enterprises, etc., dominate often. In many cities, it is less accurate to speak of them having an informal sector; instead, it is more apt to say that they are informal cities with a formal sector.

Given the prevalence of informality, it seems to have advantages over formality, as it always fills the gaps left by the absence of formal structures and systems.



Informal systems encompass systems of infrastructure, economy, politics and law. While formal structures and systems often struggle to reach beyond a small part of the urban realm, informal structures and systems quickly fill the void. In some way, they appear inevitable.

They effectively turn these voids into, albeit often very fragile, deficient and inadequate opportunities to make a living by rapidly and flexibly adapting to situational changes and accumulating narrow gains. They take advantage of marginal spaces and benefits that may be too small for "heavier" formal systems to attend to.

accessibility

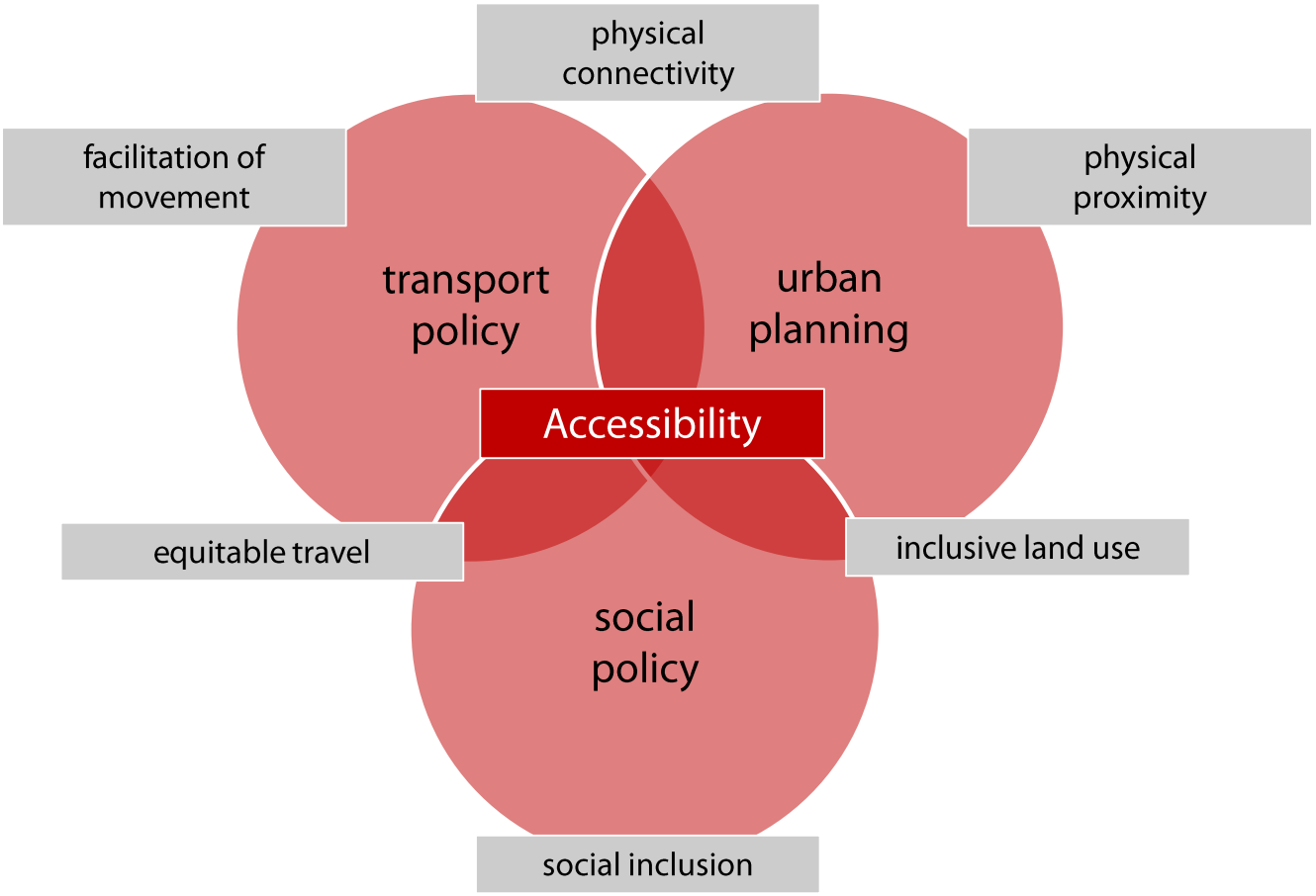
Accessibility of opportunities and (basic) services is closely linked to the configuration and management of basic service delivery, mobility, spatial justice, and others, but they are not the same.

Services may be rendered and available yet not accessible due to physical or invisible barriers, such as legal regulations.

Spaces may be legally and culturally accessible but too remote and therefore unaffordable.

Opportunities may be within physical reach but socio-culturally unattainable due to cultural taboos or a lack of knowledge and understanding of how to harness them.

Accessibility requires opportunities, services, spaces, and amenities to be physically reachable, affordable, understandable, manageable, and legally and culturally available.



Rode, P., Heeckt, C., da Cruz, N.F. 2019. National Transport Policy and Cities

Accessibility can be promoted through different spheres of urban management and planning.

Urban planning can ensure that opportunities, amenities and services are located within physical reach and, in conjunction with social policy, plan land use in a way that maximises accessibility for all parts of society.

Social policy can promote inclusion through laws and regulations, cultural change and increased acceptance and, jointly with transport policy, make mobility more equitable.

Transport policy can increase mobility, i.e. make different modes of movement available (and if equitable at an affordable rate) and, combined with urban planning, ensure that places are sufficiently interconnected.

All three spheres must work in conjunction and align to ensure fair, inclusive and equitable accessibility.

land

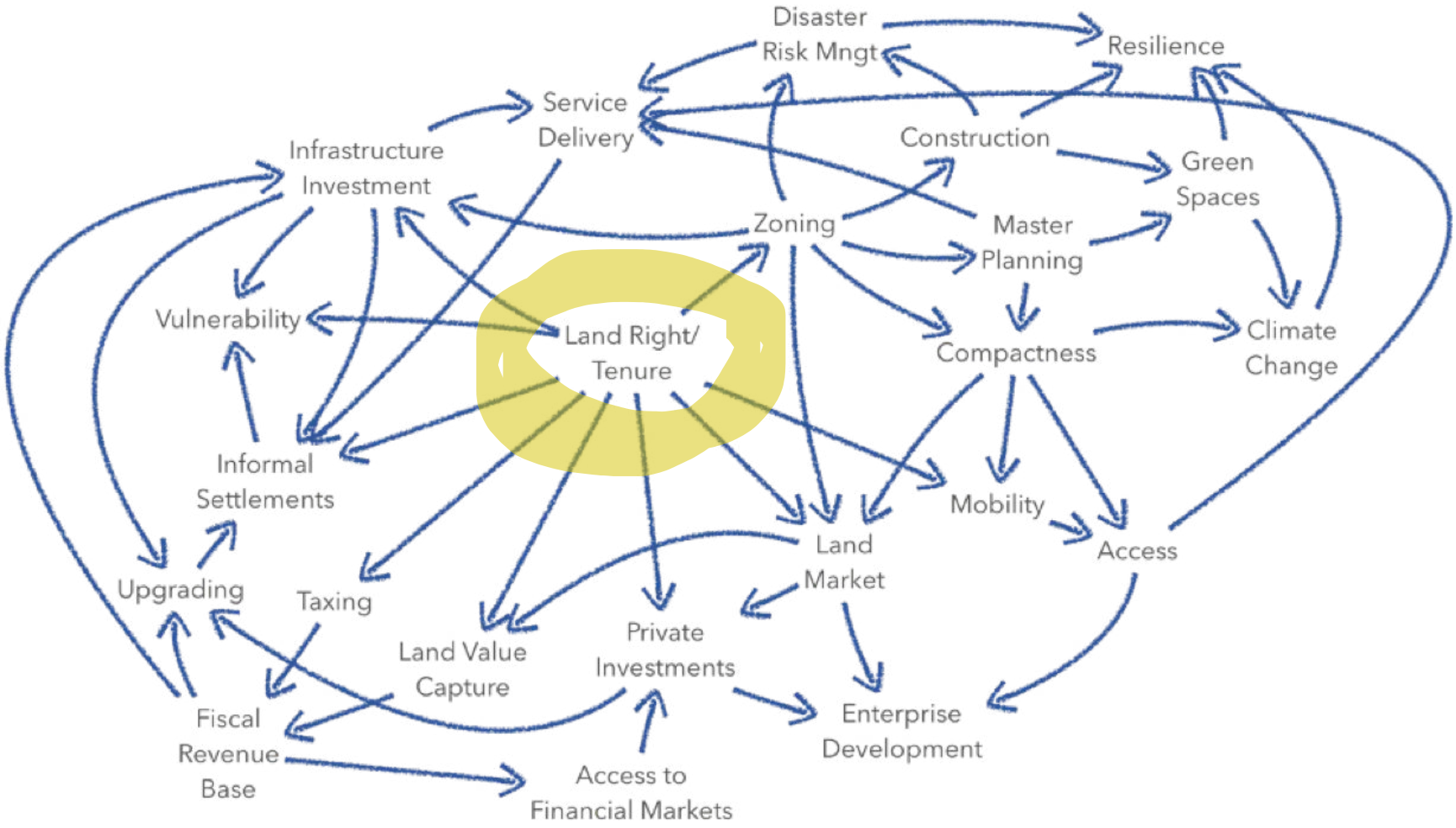
Land has always been a key asset, but urbanisation has drastically changed its character and importance.

In urban settings, the importance and value of land are no longer primarily based on its agricultural productivity, such as fertility, water, and slope. Instead, it's now a location factor within the urban system, with its value influenced by proximity to centres, hotspots and hubs. Location determines the accessibility and reach of a long list of features: opportunities, services, amenities, facilities, and infrastructure, as well as clients, customers, partners, and stakeholders.

As a result, competition for this increasingly valuable asset becomes more intense, leading to conflicts such as grabbing, occupation, and evictions.

The evolving value and significance of urban land call for active management to ensure secure land rights and tenure (registration and titles), and land use planning. This is crucial in mitigating conflicts and ensuring sustainable and future-oriented urban development.

Land, land right and tenure are key factors in the complexity of urban systems, have direct or indirect implications for many other processes and determinants of urban development.



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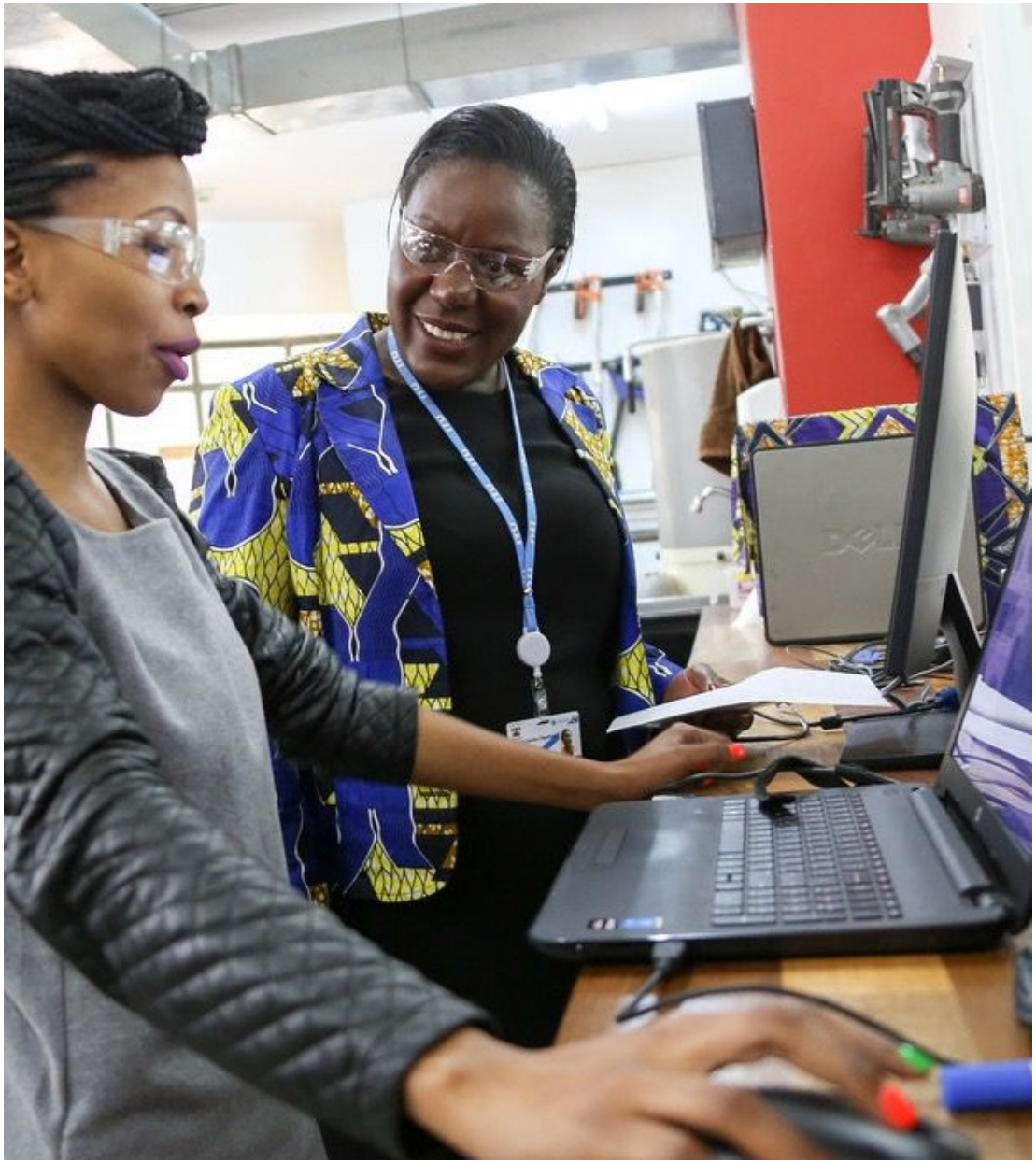


innovation

Innovations naturally emerge as urban systems become more intense. As more minds come together and share their idea, driven by increasing economic activity, innovations are born. These innovations both result from and contribute to further urbanisation.

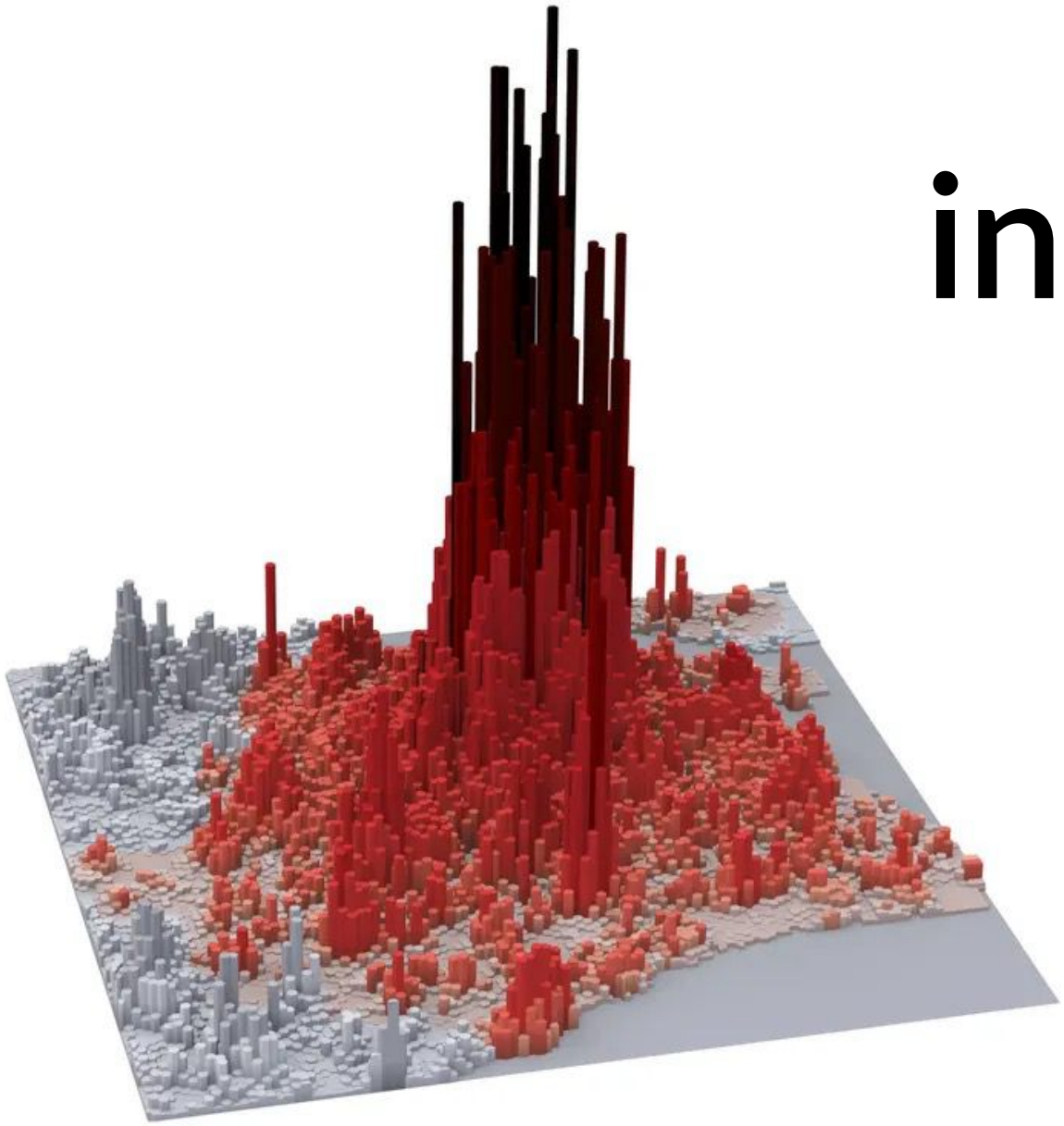
Urban actors can harness the potential to rev the economic engine that cities are, to deliver more and better services, enhance accessibility, manage and plan urban systems and developments, and promote spatial justice introducing new ways to increase transparency and hold stakeholders accountable.

Silicon Valley is home to some of the world's most valuable companies, such as Facebook (pictured here). The headquarters of the company, worth approximately $800 billion, sits opposite from a homeless camp in the scrubland surrounding San Francisco Bay. They are inhabited by unskilled workers in these and other industries in the area, no longer able to keep up with the sky-rocketing prices.

https://unequalscenes.com/san-francisco-los-angeles

Innovation has also a shadow side: it is a massive driver of inequality and exclusion. The benefits of innovation (and the economic engine it further fuels) are not equally distributed and accessible across the urban population.

Instead, innovation can drive exclusive dynamics such as higher prices and gentrification, often at the expense of less fortunate or less qualified members of society. Innovation – by sprinting ahead – can leave many behind, creating significant gaps and decreasing social cohesion rather than strengthening it.



intensification

Intensification refers to the process and related strategies aimed at making more efficient and sustainable use of urban space. This involves increasing the complexity of human interaction and the density of infrastructure. The process includes the redevelopment and conversion of areas within existing urban boundaries to optimize their utilisation. Improving existing infrastructure (such as the built environment, public transport, and public spaces) and implementing new infrastructure in line with intensification strategies helps to create more sustainable, liveable, and efficient urban systems and areas. It also helps to curb uncontrolled urban sprawl and preserve natural ecosystems.

By intensifying urban areas, scaling effects can contribute to higher efficiencies, such as improved infrastructure, amenities, and services utilisation, leading to reduced resource consumption (costs, land, energy, shorter travel distances, etc.). Higher interaction densities can boost economic activity through economy of scale and market optimisation, facilitate intellectual exchange, including learning and innovation, and promote cultural production.

However, densification also leads to higher emissions and pollution. Socially, economically, and politically, intensification can result in higher congestion, stress, and competition for resources and opportunities, which may lead to increased conflict.

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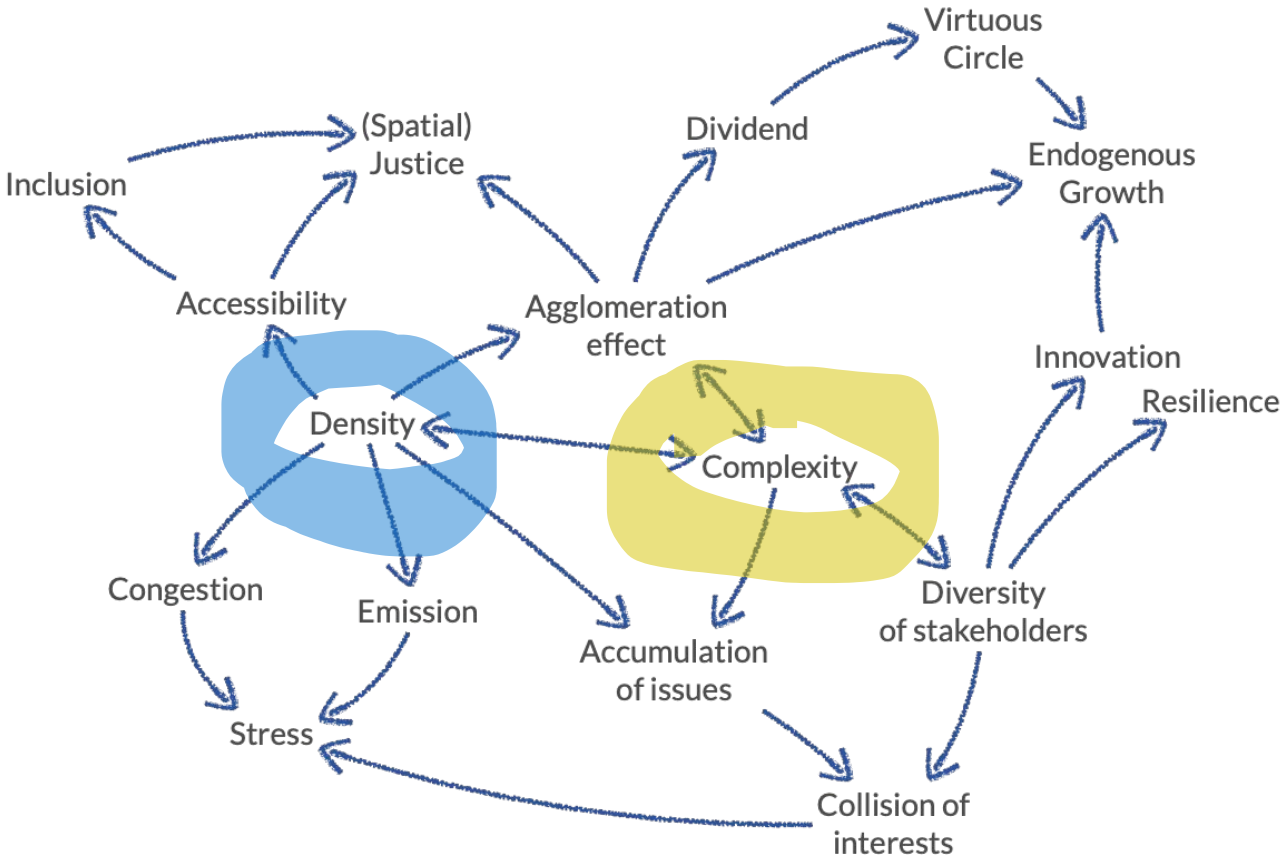
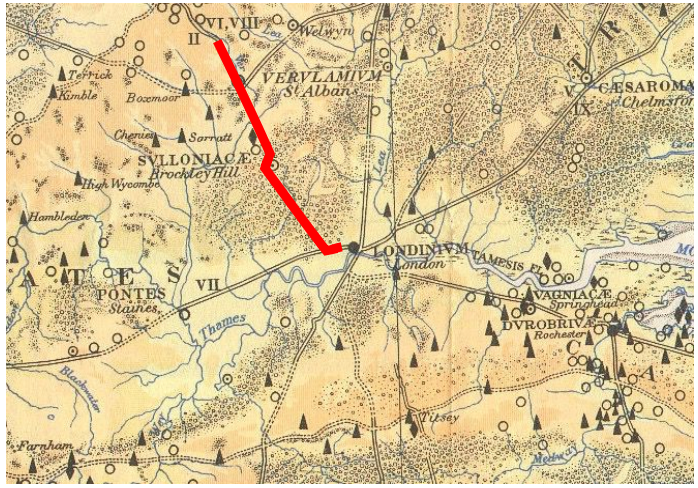


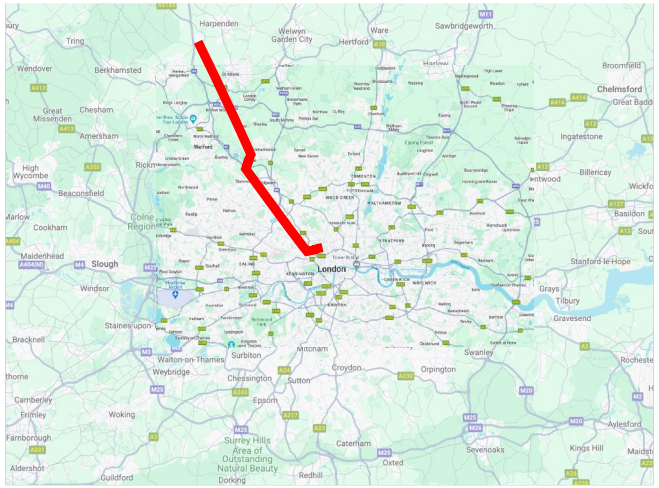
The “Conditio Urbana”

The process of urbanisation, which involves urban development and growth, creates conditions of intensification. This leads to increased density and complexity of urban areas, giving rise to cities.

To make the most of intensification, city planners and policymakers need to direct development and growth in positive directions (and minimise negative effects) through urbanisation strategies and policies, urban and spatial planning, balanced economic growth and incentives for desirable social and environmental change.

One important factor to consider is path dependency, i.e. the long-term impact of decisions on urban form and structure. For example, the A5 road, still a major thoroughfare in London, was built by the Romans almost 2000 years ago, highlighting the long-lasting effects of past decisions. Therefore, present-day decisions (or the lack thereof) can have far-reaching and potentially irreversible consequences for future generations.





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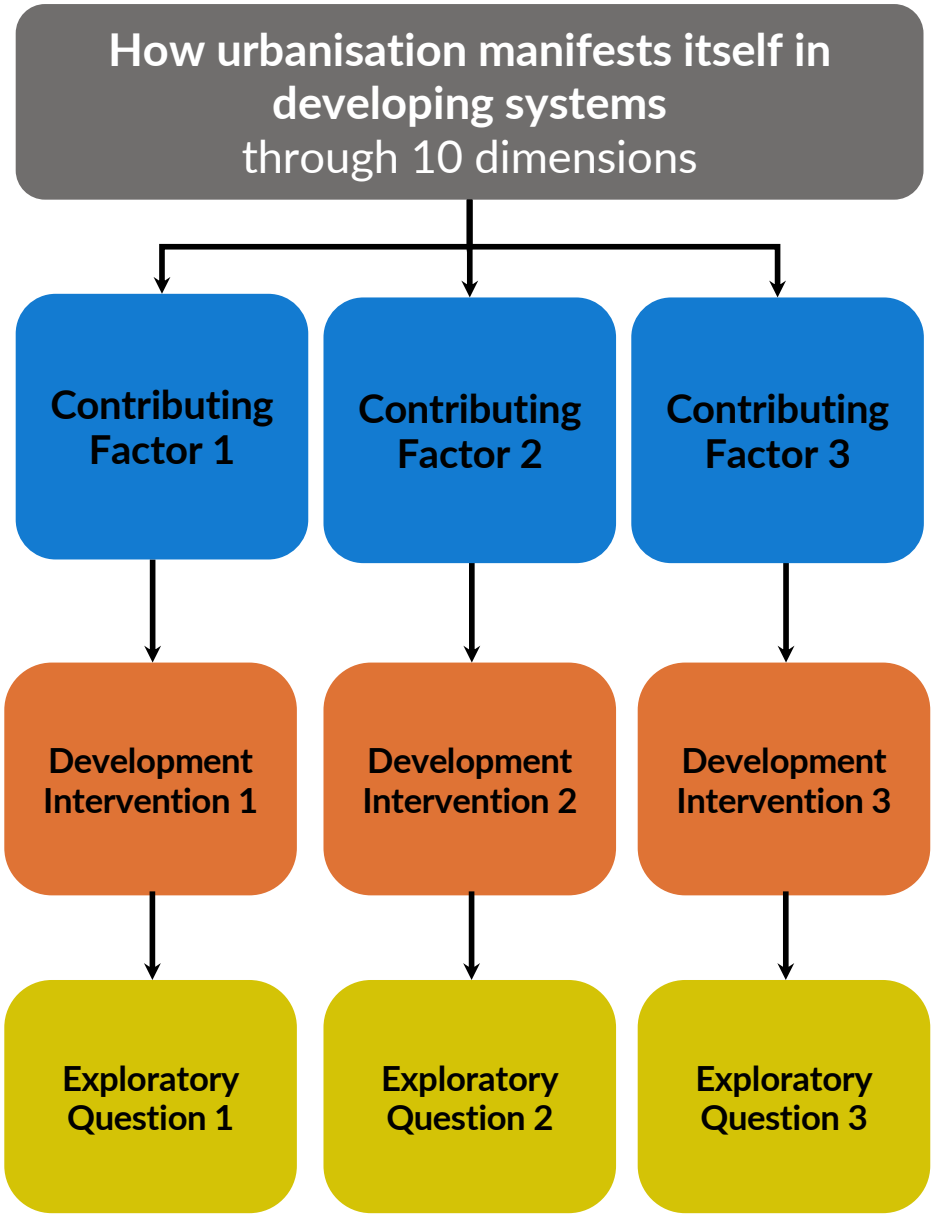
An Assessment Tool to Make Programming Sensitive to Urbanising Contexts

This 10-dimensional model of urbanisation has been refined and translated into a tool, intended to encourage different stakeholders to:

a) become aware and mindful of the urbanisation process being underway;
b) consciously form an opinion on whether the initiative should or should not relate to or influence each dimension;
c) identify how strongly this relation or influence tends to be present; and lastly
d) provide some indications of why a relation/ influence is particularly weak or strong and what aspects - their presence or absence - may lead to a particular outcome.

Every model is arbitrary - they all carve out and portray a small part of reality and ignore the rest. This model can be both supported and questioned for many valid reasons, but this is true for every model and the choices involved.

Tool Structure



These 10 dimensions are
→ agnostic, i.e. applicable to any situation, context, or place
→ phenomenological, i.e. purely descriptive of the observation
→value-neutral, i.e. neither of a desired nor an unwanted nature, not qualifying as good or bad

Each dimension is operationalised by breaking it down into 3 contributing factors, each looking at a different aspect but collectively describing the dimension in a broader manner.
These factors are discrete (no overlaps) - each addressing an aspect of its own, and – like the dimensions themselves – they are agnostic, phenomenological, and value-neutral.

Each factor can be converted into a pragmatic goal of what would be a desirable development, i.e. what to strive for;
as such, and unlike the above, this goal is normative!

These development interventions can be reformulated as a question, inquiring to which degree that goal is present/ pursued in a particular intervention
Scale: 1 to 5 (fully absent ↔ fully present/ observed/ pursued)

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Description of Ten Dimensions

The ten dimensions each have a precise formulation, which then is broken down into three discrete contributing factors, resulting in a total of 30:

Spatial Data/ Information

Granular spatialised data/ information is a key to understand the specific features (= morphology) and dynamics of a location (→ context) and its generation, interpretation and management is essential for empowerment and rational choice making.

Gather geo-referenced data	Capacitate communities to understand place (interprete data)	Good management of data w/ public access

Economic Engine

Urban centres show agglomeration effects, leading to endogenous growth and yielding an urban dividend, i.e. creating new values and assets and therefore funds to further sustain the function and evolution of the urban centres.

Leverage concentration & diversification	Leverage dividend to sustain & fund functions	Functional balance between production & consumption

Transactions

Diverse and many transactions (like transportation, trade, commodity chains, service systems, resource sharing, ...) across urban systems are the key to value generation and efficiency; the creation and leveraging of opportunities make urban systems more productive, functional & efficient.

Leverage opportunities from linkages & synergies	Manage well rural-urban connections for efficiency	Strategies for horizontal coordination for complementarity

Basic Services

Basic services become increasingly complex, interdependent and their efficiency becomes dependent on the alignment with the underlying structure of the urban system and the consideration of growing demand.

Spatial perspective on delivery (local specificities, disbalances)	Plan in harmony with urban system structure	Strategies & plans cater for future development & growth

Spatial Justice

Urban systems manage (facilitate or prevent) the participation of communities and people in their spaces' social, political and economic life (incl. public spaces, services, amenities and opportunities), thus increasing or reducing marginalisation.

Inlcusive participation for all in urban life, reduce barriers causing marginalisation	Active promotion of participation of disenfranchised groups	Active citizenship to shape future form & function

Informal Systems

In the absence of formal systems, informal systems are the only yet valid substitution, filling the void, often constituting the prodigious majority of urban society.

Strengthen de-facto sole path for many functions	Acknowledge/ leverage strengths of informal systems	Mitigate & tranform negative effects

Accessibility

In urban systems, accessibility depends on physical connectivity, the form of land use and mobility, which all are determined by social policy, transportation policy and urban planning.

Inclusive & adequate transportation planning	Reduction of mental, cultural, social, legal barriers	Spatial & land useplanning to place infrastructures, services, opportunities

Land

The importance and value of land transform in urban systems, sustained and harnessed through active management of land rights, tenure, security and registration.

Regulate land management for equitable / inclusive land use	Capture land value increase to fund development	Spatial strategies/ plans for future land use needs

Innovation

Innovation (e.g. green technologies, digital tools and technologies, etc.) is a byproduct of urban growth, which can be harnessed to drive economic growth (entrepreneurship), participation, political transparency & accountability, eco-management, etc.

Scout for innovations for service delivery & good governance	Innovation-driven entrepreneurship for economic growth	Mitigate/ contain innovation-induced inequalities & exclusion

Intensification

Urban growth leads to higher densities and frequencies on every level, i.e. in terms of people in an area, its built environment, social and economic interaction, which increase efficiency on the one side but leads to competition and conflict as well as higher stress, congestion and elimination of natural resources on the other side.

Anticipate/ respond emerging requirements to infrastructure & services	Anticipate & manage growing demand/ competition for land & densification	Densify infrastructure & srices to minimise land/ resource consumption/ sprawl

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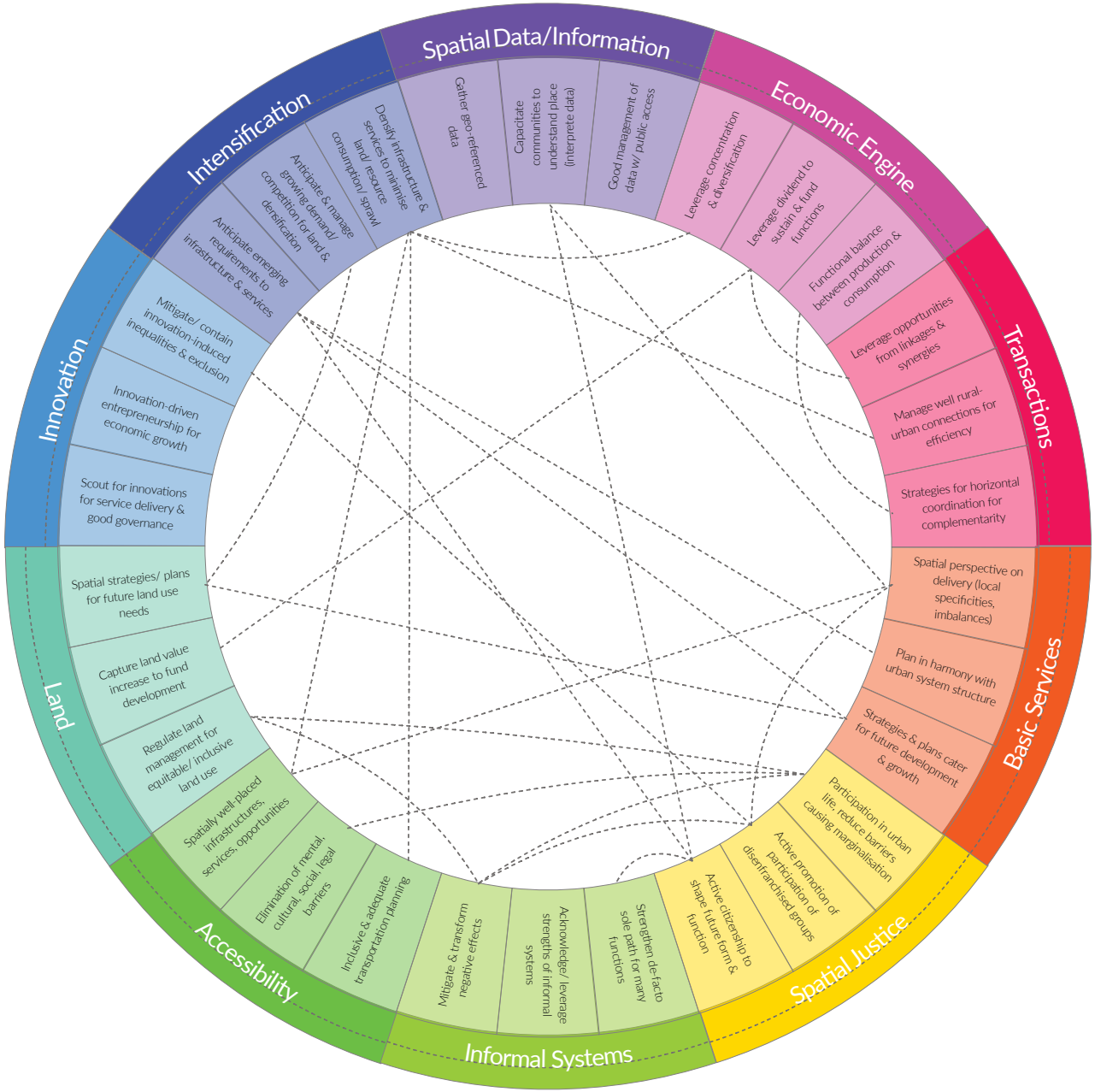

Interdependence between Factors

Given the complex, systemic nature of urbanisation, the 30 factors are highly interactive and influence each other.

This visualisation represents a few particularly pronounced interdependencies. Addressing and influencing one factor will inevitably result in influencing another one; or the ignorance of the influence of a proxy factor can lead to unintended outcomes.

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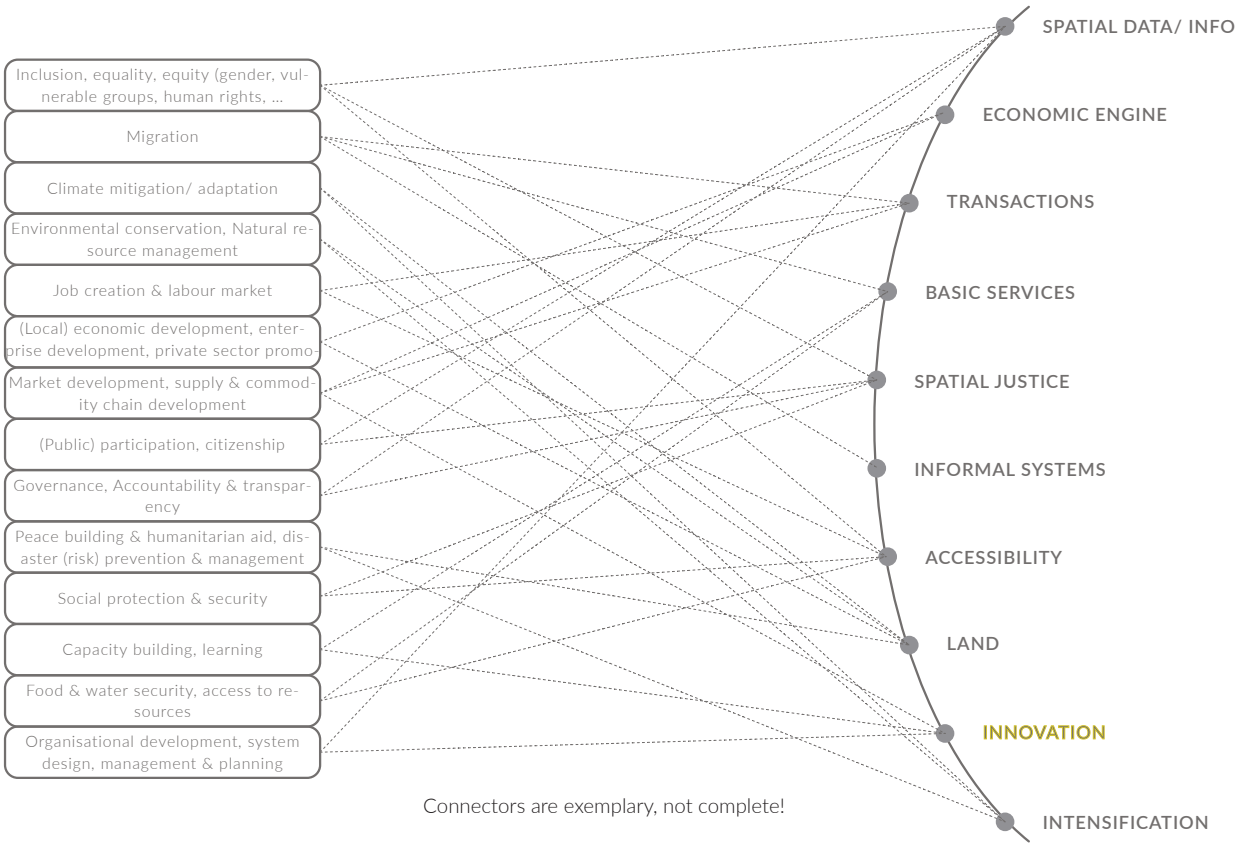

Mutual Influence between Development Processes and Dimensions of Urbanisation

Development processes, often represented by specific sectors and themes, are interdependent with the various aspects of urbanisation. These processes both influence and are influenced by the ten dimensions of urbanisation. However, it's important to note that no direct one-to-one relationships exist. For example, "governance" cannot be simply equated to "spatial justice". Instead, each dimension is affected by and, in turn, influences multiple development processes.

From a strategic perspective, these interdependencies harbour the potential to integrate fragmentation.
To tackle one dimension of urbanisation, it is necessary for different processes to work together in synchrony. This often involves spanning across different "thematic silos" and requires coordination, joint strategising, and planning.

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