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Spatial Development Initiatives – Potentials, Challenges and Policy Lessons

With a Specific Outlook for Inclusive Agrocorridors in Sub-Saharan Africa

Caroline Reeg

Spatial development initiatives – potentials, challenges and policy lessons

The German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE) is a multidisciplinary research, policy advice and training institute for Germany's bilateral and multilateral development cooperation. On the basis of independent research, it acts as consultant to public institutions in Germany and abroad on current issues of cooperation between developed and developing countries. Through its nine-month training course, the German Development Institute prepares German and European university graduates for careers in the field of development policy.

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Abstract

In recent years, the promotion of economic corridors has gained increasing attention in national, regional and international discussions on attracting investments, stimulating agribusiness development as well as addressing food insecurities and malnutrition in low- and middle-income countries (LMICs) (Gálvez-Nogales, 2014; IAASTD [International Assessment of Agricultural Knowledge, Science and Technology for Development], 2009; World Bank, 2009). Against this background, the G8 has introduced the "New Alliance for Food Security and Nutrition in Africa" – an international multi-stakeholder partnership including 10 African partner countries, international organisations, as well as international and national agro-businesses – with the aim to unlock private agricultural investments and integrate them into broad-based rural development along so-called agrocorridors. Agrocorridors are defined as agricultural and land-based investments along spatially defined and connected geographical areas.

Though agrocorridors are being widely talked about, very little empirical data exists on the economic performance and inclusiveness of agricultural corridor initiatives in LMICs. Especially in Africa, only a few, if any, implemented cases of integrated agrocorridors can be found, with scant systematic information being collected on their institutional and infrastructural design, their investment as well as economic performance, smallholder integration and potential lessons learnt from good practices and common mistakes. In fact, all corridors of the New Alliance are only just emerging. However, although agrocorridors constitute a rather new instrument to shape spatial economic development, other spatial development initiatives exist, that is, spatially-organised economic development schemes, that have longer track records. This report defines spatial development initiatives (SDIs) as an integrated economic policy approach of spatial planning with the aim to develop business and investment environments in specific areas. There exist several types of SDIs, which differ in their principal objectives, geographical scales as well as sectoral and industrial focus. This report covers five types of SDIs: (1) special economic zones (SEZs), (2) technopoles and science parks, (3) industrial parks, (4) clusters and (5) economic corridors.

There is mounting evidence that SDIs are very difficult to get right. Across LMICs, the overall performance of SDIs tends to be mixed. Only a very small group of SDIs – mostly in East Asia and some Lain American countries

– have been successful in achieving their intended goals. Within the African context, most zone programmes show low levels of investment and exports, and very moderate employment impacts. In fact, many programmes have shown signs of stagnation and decline. Several necessary but no sufficient conditions exist for success.

Overall, this report shows that the economic as well as social performance of SDIs is inherently linked to the quality of the national investment climate. Though the "island" approach of SDIs promises to address and remove various growth obstacles for regional economic development, evidence suggests that spatial approaches rarely deliver a considerably improved environment beyond what is available "outside" of a targeted area. However, it is also argued that there are several factors that constrain an SDI's effectiveness. First, the role of adverse physical and economic geography – that is, poor location, small market size and low market demand – should not be underestimated. Second, the lack of good quality physical infrastructure, effective regulatory infrastructure regimes as well as social infrastructure contributes to the underperformance of many SDIs and should be highlighted. Third, several deficits in the SDI-specific and national soft infrastructure impede the performance and sustainability of SDIs. Fourth, a variety of governance failures as well as political economy factors impact on the sustainability of spatial development approaches.

Preface from the DIE

This study has been written in the frame of the German Development Institute's (DIE) research project "Promoting food security in rural sub-Saharan Africa: the role of agricultural intensification, social security and results-oriented approaches", which is being funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) under its special initiative "One World, No Hunger" (SEWOH).

In this project, special emphasis is put on the role of sustainable agricultural intensification and social security to promote food security while recognising that different approaches may be needed in fragile state contexts. It is explicitly acknowledged that the rural populations are not homogeneous and have differentiated development potentials and support needs (Rural Worlds, see Brüntrup, 2016). In line with the aid effectiveness agenda, the project also explores how the results orientation of food security interventions can be improved.

The topics are allocated across eight working packages:

1. Conceptual framework: sustainable food security in rural sub-Saharan Africa
2. Agricultural growth corridors within the New Alliance for Food Security and Nutrition in Africa
3. Agro-ecological support of subsistence-oriented farms
4. Agricultural investments and finance in small-scale agriculture
5. Promoting irrigated agriculture
6. Social security systems, food security and long-term development
7. Fragility and its interaction with sector approaches to combat hunger
8. Results-based approaches and results-based management

The project seeks to cross the barriers between the different sectors and academic fields and to derive broader insights and recommendations on food security in rural areas. Cooperation is sought with other research organisations funded within the SEWOH initiative, with universities and think tanks, with projects of German development cooperation, with international organisations such as the International Fund for Agricultural

Development (IFAD) and the World Bank, as well as with civil society and the private sector. Results are spread through high-quality research papers and studies, policy briefs and opinion texts, electronic media, conferences, seminars and workshops.

In this context and fully in line with the special initiative (SEWOH) of the BMZ, this study on "Spatial development initiatives – potentials, challenges and policy lesson" was commissioned for the specific topic of agricultural growth corridors in work package 2. Spatial initiatives are often oriented towards smaller, highly integrated industrial areas and non-agricultural sectors or, at best, use agricultural commodities, but they do not deeply embed agriculture in their strategies. Agrocorridors, on the other hand, are much larger but less integrated and closed. Importantly, and in difference to most industrial spatial initiatives, they have to deal with the existing populations, notably smallholder farmers and rural communities, and with the existing (use of) natural resources, and are therefore more strongly bound to pathways. Thus, lessons can be learnt, but one has to take care which ones. Second, spatial initiatives are per definition not oriented towards sectors but towards a geographical space. Thus, this leads to the embedded principles that the DIE project envisions: being cross-sectoral, connecting very different stakeholders – in particular said smallholder farmers and rural communities on the one side, and very large agricultural producers, agro-processors and traders on the other – as well as supporting industries as well as various administrations. Being isolated, the performance of SDIs is relatively easy to measure – though reasons for (lack of) performance are much more difficult to capture. Thus, we thought it would be a very appropriate object of thorough review for our research programme. We hope you appreciate it, too.

Acknowledgements

This study would not have been produced without the valuable contributions, detailed comments and advice of staff from DIE. Michael Brüntrup initiated the study and accompanied it throughout its development. Andreas Stamm offered valuable comments on the final version. The author is also grateful for comments on an earlier draft that were made by Aimée Hampel-Milagrosa. Of course, any remaining errors are mine alone.

Berlin, October 2017 Caroline Reeg

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Abbreviations

BAGC	Beira Agricultural Growth Corridor
CAREC	Central Asia Regional Economic Cooperation
EPZ	export processing zone
EPZA	Export Processing Zone Authority
ESIA	Environmental and Social Impact Assessment
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FDI	foreign direct investment
FIAS	The multi-donor investment climate advisory service managed by the International Finance Corporation and supported by the Multilateral Investment Guarantee Agency and the World Bank (International Bank for Reconstruction and Development)
GMS	Greater Mekong Subregion
GVC	global value chain
ILO	International Labour Organization
IPA	investment promotional agency
LMICs	low- and middle-income countries
M&E	monitoring and evaluation
NEG	new economic geography
NEPZA	Nigeria Export Processing Zones Authority
NGO	non-governmental organisation
NTB	non-tariff barrier
PPD	public–private dialogue
PPP	public–private partnership
RA	regulatory authority
R&D	research and development

SAGCOT	Southern Agricultural Growth Corridor of the United Republic of Tanzania
SEZ	special economic zone
SDI	spatial development initiative
SME	small and medium enterprise
SSA	sub-Saharan Africa
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organisation
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security
WTO	World Trade Organization

Executive summary

In recent years, the promotion of economic corridors has gained increasing attention in national and international discussions on attracting investments, stimulating agricultural and agribusiness development as well as addressing food insecurities and malnutrition in low- and middle-income countries (LMICs) (IAASTD, 2009; World Bank, 2009). Economic corridors consist of existing transport networks, for example roads and railroads, linking several economic agglomerations and other investment areas with transnational and/or regional markets and ports to improve their connectivity and thereby link area-defined urban, semi-urban and rural businesses into a system that can efficiently move raw materials, processed and manufactured goods, services and information across space. Hence, in the agricultural context, economic corridors are assumed to function as an integrated spatial strategy to promote agricultural productivity, efficiency in food and non-food production, income increases for smallholders, job creation, and overall economic development of rural and land-locked areas. Especially in Africa, where smallholders produce 70 per cent of the total food supply (IFAD [International Fund for Agricultural Development] & UNEP [United Nations Environment Programme], 2013; IAASTD, 2009), the integration of smallholders into inclusive and development-oriented agrocorridors appears to be a promising approach to address the structural weaknesses of these actors with regards to market access, technology, input, credit etc., which ultimately often lead to poverty, food insecurity and malnutrition. This report understands agrocorridors as agricultural and land-based multi-sectoral programmes combining hard and soft investments and other support and coordination measures along spatially defined and connected geographical areas. Inclusive agricultural growth and rural development is defined as a pattern of economic growth that provides developmental opportunities and benefits for the poor, especially farmers and other rural stakeholders.

Against this background, the G8 has introduced the "New Alliance for Food Security and Nutrition in Africa" – an international multi-stakeholder partnership including 10 African partner countries, international organisations, as well as international and national agro-businesses – with the aim to unlock private agricultural investments and integrate them into broad-based rural development. Based on the idea of building thriving agrocorridors, the private sector is supported in its investments if these are (socially) responsible,

meaning they are aligned with the host country's agricultural strategies and in partnership with smallholders as critical market actors (see NAFSNA [New Alliance for Food Security and Nutrition in Africa], 2015). This public support involves indirect measures such as the provision of infrastructure, match-making, training measures as well as the targeted support of local small and medium enterprises (SMEs). Yet, critics have also argued that it is smallholders that are most likely to lose out on "scaling-up" agricultural production due to land concentration processes, too-high entry barriers into formal agricultural value chains and strong dependencies.

Though agrocorridors are being widely talked about, very little empirical data exists on the economic performance and inclusiveness of agricultural corridor initiatives in LMICs. Especially in Africa, only a few, if any, implemented cases of integrated agrocorridors can be found, with scant systematic information being collected on their institutional and infrastructural design, their investment as well as economic performance, smallholder integration and potential lessons learnt from good practices and common mistakes. In fact, all corridors of the New Alliance are only just emerging. However, although agrocorridors constitute a rather new instrument to shape spatial economic development, there exist other spatial development initiatives, that is, spatially-organised economic development schemes, that have longer track records. Accordingly, analysing and learning from former economic spatial development initiatives, including some empirical cases of economic corridors, in Asia, Latin America and Africa, might guide governments and policymakers in shaping economically viable and inclusive agrocorridors in sub-Saharan Africa (SSA).

Consequently, the main objective of this report is to analyse the potentials and pitfalls of SDIs. The report addresses the following **three questions**:

- Economic performance of SDIs/ economic zones: What are the factors driving private investments, exports and employment in SDIs, and what are potential constraints within the context of SDIs? When do SDIs facilitate economic upgrading, technology and knowledge diffusion and contribute to more structural transformation processes with the national territory?
- Social performance of SDIs: Under which conditions does economic performance within SDIs lead to improvements in job quality and the

integration of local stakeholders, in particular small businesses and farmers. Which negative social and environmental externalities arise, and how can these be minimised? And, what does it take to warrant the interests of local, in particular rural, communities?

- What are the policy lessons and implications for agrocorridors?

Definitions and typologies

This report defines spatial development initiatives (SDIs) as an integrated economic policy approach of spatial planning with the aim to develop a region's business and investment environment (please see Section 2). Here, a region is defined as a sub-national entity. Regions crossing national borders will be defined as a transnational or cross-country region. This integrated spatial approach to economic development entails investments in physical as well as soft infrastructure. Though visions of SDIs can differ greatly, this report broadly sees their potential contribution in driving economic dynamism, inducing wealth generation and driving job creation. If followed up with social and redistributive policies in the long term, SDIs may even be able to potentially minimise spatial income disparities between a territory's core and periphery in the long term. However, in the short- and medium term, SDIs may even reinforce spatial disparities. There exist several types of SDIs, which differ in their principal objectives, geographical scales as well as sectoral and industrial focus. This report covers five types of SDIs (please see Section 2.2): (1) special economic zones (SEZs), (2) technopoles and science parks, (3) industrial parks, (4) clusters and (5) economic corridors.

SDI performance

There is mounting evidence that SDIs are very difficult to get right. The study shows that only a very small group of SDIs – mostly in East Asia and some Lain American countries – have been successful in achieving their intended goals. Within the African context, most zone programmes show low levels of investment and exports, and very moderate employment impacts (see Section 2.3). In fact, many programmes have shown signs of stagnation and decline. Accordingly, there has been a long debate over the years as to whether SDIs are an effective policy instrument in general (World Bank, 2009).

Determinants of SDI performance

There exist several explanatory approaches as to why SDIs perform or not. These approaches can be derived from some of the theoretical discussions covered in Section 2.1. The main theoretical perspectives include those that highlight the role of geographical factors (Diamond & Ordunio, 1997; Krugman, 1991a, 1991b, 1993; Sachs, 2001), those that underscore the importance of the investment climate, in particular those of institutions and good governance (Acemoglu, Johnson, & Robinson, 2002, 2005; Eifert, Gelb, & Ramachandran, 2005; Hausmann, Rodrik, & Velasco, 2008; Klein & Hadjimichael, 2003; Rodrik, Subramanian, & Trebbi, 2004), and those that use a mixture of both traditions (World Bank, 2009). Accordingly, the academic literature has researched a number of factors related to the success and failure of SDIs. Largely, there exist four central groups of factors: (1) market size, location and natural endowments; (2) hard infrastructure, that is, physical infrastructure; (3) soft infrastructure, that is, institutions, laws, regulations and policies; and (4) governance. The review of the literature and subsequent subsections has been oriented towards these four groups:

1. *Geography and natural endowments* covers those exogenous characteristics that are idiosyncratic to the location and landscape of an area, region or country, for example landlockedness, natural resources and market size.
2. *Hard infrastructure*, that is, physical infrastructure, which involves the quality, access and maintenance networks of roads, rail tracks, energy grids, water pipelines, etc.
3. *Soft infrastructure* is shaped by the formal institutions, laws, regulations and policies that shape the business environment as well as other factors such as finance, labour, knowledge and technology markets.
4. *SDI governance* involves all those factors that are directly linked to informal institutions within the SDI and the quality of formal institutions (e.g. the de facto implementation of the rule of law), the political economy, economic governance (within value chains and of relationships between private actors), and all micro aspects linked to the design, strategic planning, management and implementation of policies.

Although the geographical approach strongly relies on the strength of exogenous, locational factors to explain zone performance, those who support the investment climate view build their explanatory approach on a number of endogenous factors (see also Sections 2.1 and 3). Conceptually, the investment climate is composed of the complex interaction between hard and soft infrastructure as well as the quality of governance. As a result, the investment climate refers to factors from the second, third and fourth categories.

Methodology and caveats

Against these conceptual underpinnings, this study documents and analyses the quantitative and qualitative evidence on the main factors that contribute to the performance of SDIs in LMICs. The study draws on SDIs in various sectors and industries; though examples from the agricultural sector and/or the agri-food industry dominate to ease the comparison with agrocorridors. The geographical coverage includes LMICs across regions in Asia and Latin America. However a strong bias and focus is laid on experiences in sub-Saharan Africa. The information was collected and synthesised from a number of mostly qualitative and some quantitatively designed case studies, as there are only a few internationally comparable and comprehensive data sets on SDIs. This is particularly true for time-series data. The lack of the latter undermines the assessment of causal relationships, which is why most of the reported assessments of SDI performance outcomes, for example investments, production, jobs or incomes, with several other factors, for example the investment climate, rely on correlations as well as qualitative comparisons. Furthermore, this review only reports aggregate SDI outcomes and does not provide information on the performance of individual firms within SDIs. There are two reasons for this. One is the lack of reliable and sufficiently detailed, comparable firm-level data within SDIs. Secondly, judging the success of an SDI programme by the performance of individual firms operating within it may provide an inaccurate and biased picture of its overall performance.

Although a review of SDIs holds many benefits for designing and implementing future spatial approaches, it is nonetheless confronted with data restrictions and several conceptual caveats:

- Overall, reported findings from small-sample datasets and case studies must be handled with caution due to the limited number of observations.
- Also, synthesising experiences of SDIs might lead to an underestimation of life-cycle effects within spatial initiatives and zoning schemes. SDIs pass various stages within a project timeline, from design to implementation, operation and adaptation. Adopting the appropriate performance criteria largely depends on the current developmental stage of an SDI.
- Finally, analysing and comparing a heterogeneous group of SDIs and merging experiences across various size formats of SDIs has the disadvantage of de-contextualising part of the information. Readers are therefore advised to be cautious when transferring insights from SDIs with different geographical and sectoral coverage to another.

Results

Studying the factors that determine the success of SDIs, this report finds several necessary but no sufficient conditions (see Section 3). In fact, studying SDIs across LMICs, a number of factors from all four thematic groups are found to impact on their economic and social performance. Thus, SDI outcomes are the result of a combination of influencing factors, conditions and interventions. Clearly, the combination of factors is highly context-dependent, that means that whatever is a sufficient mix of factors might have led to success in one case, but not another. Yet, one *main* overarching message emerges:

The *quality of the national investment climate* is of vital importance in determining the economic as well as social effectiveness of SDIs. Deficits in national competitiveness, institutional quality, regulatory capacity and governance appear to be of critical importance for SDIs. Though the "island" approach of SDIs promises to address and remove various growth obstacles for spatial economic development, evidence suggests that spatial approaches rarely deliver a considerably improved environment beyond that which is available "outside" of a targeted area. Especially in Africa, SDIs face the same growth bottlenecks – poor infrastructure, heavy bureaucracy, inefficient and corrupt customs, weak regulatory capacity – that lead to crippling economic dynamism in the rest of the country. As a result, spatial

approaches are only likely to be effective if governments intervene beyond spatially confined areas and if they integrate SDIs into a broader strategy to improve the overall investment climate. This requires spatially blind institutions. In contrast, using SDIs as an isolated instrument of regional development policy is doomed to fail.

Furthermore, the review identifies several **relevant factors, conditions and lessons** in explaining the economic and social performance of SDIs:

- *First*, the role of adverse physical and economic geography, that is, location, should not be underestimated. The access to suitable natural resources (physical geography), transport costs, market size and effective market demand (economic geography) impact on whether an SDI attracts investments and creates employment. Rather than political decisions, it is market-driven dynamics that open up possibilities for successful economic concentrations. Hence, policymakers should carefully analyse the locational factors when using SDIs as an instrument to attract investments.
- *Second*, though SDIs are meant to provide an environment with improved physical infrastructure, various factors can be observed as contributing to infrastructure delivery failures and underperformance. For a start, poor locational choice of SDIs as well as deficits in the nation-wide infrastructure distract and limit investments. Moreover, failures to ensure the complementarity, quality and maintenance of infrastructure investments leads to the underperformance of firms located within SDIs. Also, improvements in the quality of physical infrastructure and infrastructure services can be offset by ineffective regulatory infrastructure regimes to address negative externalities and ineffective competition policies to fight oligopolistic tendencies. Finally, social infrastructure investments – that is, investments in hospitals, schools, recreational facilities, childcare and other social services – are often neglected. Yet, these are vital if SDIs rely on labour-intensive production or wish to economically upgrade, and therefore need to attract workers.
- *Third*, several deficits in the SDI-specific and national soft infrastructure impede the performance and sustainability of SDIs. To begin with, this involves a poor national regulatory business environment that fails to address problematic and corrupt customs clearance, tariffs and non-tariff

barriers, lengthy bureaucratic procedures, dysfunctional incentives, poor investment promotion and ineffective employment- and environment-related regulations. Furthermore, overlapping and ambiguous legal frameworks as well as poor de facto implementation hamper SDI development. What is more, poor land planning and management, a lack of proper land rights as well as limited transparency and poor procedural rights in land deals lead to severe land market distortions, a lack of investments and failures to generate better and more equitable returns from SDIs. Finally, regulatory barriers as well as ineffective linkage and spillover policies fail to reap the full potential of SDI programmes for local farmers, firms and workers.

- *Fourth*, underperformance of SDIs or economic zones can also partly be attributed to a variety of governance failures that originate from organisational deficits among SDI planners, SDI regulatory authorities, national agencies and ministries. These deficits are poor strategic planning and management; lack of expertise; as well as tight and uncertain operating budgets; dysfunctional institutional and administrative structures of the SDI regulatory authority; missing private-sector involvement; and ineffective local stakeholder participation mechanisms. Also, many SDI planners lack a proper understanding of global value-chain dynamics and their governance to identify and make use of developmental opportunities. Furthermore, few SDI planners and national authorities provide the long-term commitment, continued institutional support, policy alignment and flexibility that is needed for the long-term success of SDIs. Eventually, nearly all SDIs fail to establish a framework for monitoring and evaluation (M&E) to make informed planning and management decisions.

Policy implications for agrocorridors

There has been a long debate over the years as to whether SDIs are an effective policy instrument (World Bank, 2009). Against the background of regional development policy, there exists a strong consensus that policy-driven SDIs in peripheral and lagging regions have largely failed (World Bank, 2009). Orthodox economists often disqualify spatial development approaches as second-best options to an economy-wide reform and development process. Indeed, as this report has shown, it is the integration

of SDIs into a broader national development strategy that makes them successful. However, recent discussions on the development of spatial initiatives see them as a supplement to country-wide reform, as opposed to creating isolated economic structures. In fact, some argue that SDIs are key to inducing country-wide structural transformation, as they allow policymakers to introduce and test politically sensitive reforms on a smaller scale (Farole & Akinci, 2011; World Bank, 2009; Zeng, 2010, 2011).

If designed and implemented properly, SDIs can act as important pockets of economic vitality for a region and country. SDIs are nevertheless risky and expensive projects. From the analyses in Sections 2 and 3, we can see that many SDI programmes in Africa have failed to attract substantial investments and achieve long-term economic and social objectives. There are only a few success stories in SSA, namely Lesotho, Madagascar and Mauritius, and even those are struggling to upgrade and develop more sustainable sources of competitiveness.

Yet, despite the weak past performance of most African SDIs, they still can be a useful instrument in driving Africa's economic development if lessons about past errors are learnt. As outlined in Section 3, SDIs can contribute to economic and inclusive development only under certain conditions. Applying these lessons to currently evolving agrocorridors in Africa should prove to be a valuable exercise. In fact, several reasons exist as to why agrocorridors are likely to be *more* effective than former SDI experiences in the African context:

- *First, agrocorridors entail market-driven strategies to use regional comparative advantages in favour of certain areas and locations*. Agricultural production involves many semi-rural, rural and peripheral areas. Thus, given adequate natural resource endowments and provided a market demand is within reach, a commercial case for the development of towns, rural areas and hinterlands often exists. In contrast, many SDIs in the past were developed from the perspective of – highly politicised – regional development. As a result, economically unfit locations were chosen that did not provide the necessary factor endowments for economic agglomerations to evolve and become competitive. Rather than being "picked" by the market, locations were "picked" by the state (World Bank, 2009). This policy practice is widespread across the globe. Yet, agrocorridor development must not

result in an evenly spread-out territorial development, to the contrary: depending on regional comparative advantages, it is highly likely that, in the beginning, agricultural production as well as agriprocessing activities will concentrate in a few rather densely populated locations. As a consequence, agrocorridors must not connect "nowhere to nowhere through nowhere" (ADB [Asian Development Bank], 2012, p. 3), but build, to a large degree, on the already existing and functioning spatial economic geography of economic centres, for example special economic zones, technopoles, industrial parks, and estates and clusters focused in agriprocessing industries. Thus, agrocorridors should be seen as a framework that strengthens agricultural production in rural areas by connecting it with a number of productive economic agglomerations and activities to create a virtuous circle of effective demand and supply. Thus, one can say that the economic geography lessons of former failures do not automatically argue against the instrument of agrocorridors, if the mentioned principles are duly taken into account. This, however, also means that – if successful – agrocorridors will exacerbate inequality, at least between rural areas, and compensating measures for other regions may be needed later. This distributive imbalance needs to be communicated at the political level.

- *Second, greater attention to agriculture and natural-resource-based sectors as well as favourable timing are likely to make agrocorridors more successful than former SDIs*. In the past, many African SDIs employed traditional SDI models that were aimed at attracting investments in labour-intensive, light assembly-based manufacturing activities, mainly garments and textiles, and partly electronics, by providing preferential access to export markets, substantial fiscal incentives and requiring a few links to the local economy. This export-led growth model in traditional sunrise industries has been the chosen developmental path of most East Asian success stories. However, within the current African context, this approach was largely mismatched with local factor endowments, for example high labour costs and small input markets. In the near future, most African countries are unlikely to become competitive traditional manufacturing platforms. In the post–financial crisis environment of traditional export markets, namely the United States and European economies, most African economies, with some exceptions such as Ethiopia, are not equipped to compete with

"factory Asia" over the already stagnating market for light manufactured products. Strategically, African economies are well advised to leverage their current comparative advantages and move towards natural-resources-based processing, including the agricultural, commodities and minerals sectors. In fact, most recently, growth in SSA was largely fuelled by demand for commodities, most notably via expanding South-South linkages (e.g. China in Bräutigam, Farole, & Xiaoyang, 2010). However, whereas minerals and non-agricultural commodities do not offer much scope for local labour-intensive value addition, agricultural commodities do, for international and even more so for regional and national markets. A major advantage of the agricultural and food industry is that it can directly cater to local end-consumers, who tend to prefer local foods and tastes. In fact, a growing middle class in many sub-Saharan African countries offers the opportunity for increasing the range of processed foods, driving the need in agrocorridors to add further stages of processing, and therefore value.

- Evidence suggests that a reorientation of existing zone programmes towards more dynamic sectors has already taken place in SSA (Farole, 2011). For example, Ghanaian zones have become increasingly concentrated in cocoa, timber and other agriprocessing activities. Also, in Kenya, zone programmes have shifted away from promoting traditional garment manufacturing towards agriculture and agriprocessing. This signals that the timing for the launch and development of agrocorridors is right. In order to leverage comparative advantages, agrocorridors will, on the one hand, require a stronger focus on building transnational, national as well as regional linkages through value chains. On the other hand, they will need to drive the development of competitive agriprocessing zones and clusters. These efforts have to go beyond achieving spatially-focused internal efficiencies and address typical challenges such as external scale and the coordination of production, storage, processing, transport and consumption.
- *Third, agrocorridors are strategically integrated into broader industrial strategies to improve the national investment environment.* Contrary to traditional SDIs, agrocorridor development lays out a conceptual framework that is inherently linked to the development of the national investment climate. By connecting several areas and

locations, agrocorridors strengthen the physical as well as institutional linkages within national as well as regional territories. Thus, in theory, agrocorridors are largely incorporating the main message of this report, that is, that the success of SDIs critically depends on what happens *beyond* spatially confined areas and locations. In other words, the extensive geographical and sectoral coverage of corridor development is more likely to foster reforms and improvements in the national investment climate (for instance, poor national physical infrastructure, lengthy customs procedures, and weak legal and regulatory frameworks) than was the case in former spatial approaches. Agrocorridors will therefore have the biggest developmental impact when they are focused more on structured efforts to improve the consistency between spatial and national industrial policies and institutions. At the same time, agrocorridors open the possibility for LMICs to focus their efforts on stabilisation and economic development on particularly promising regions and areas.

On the other hand, several old challenges and anticipated new ones exist. The future sustainability as well as the potential of agrocorridors for scaling-up depends, to a great extent, on how successfully governments can overcome the following challenges and issues.

- *First, the lack of quality physical infrastructure remains a critical gap in most African countries*. *Supporting the development of quality infrastructure investments along agro-corridors, as well as improving the regulatory infrastructure regime and social infrastructure, is necessary to make agrocorridors economically viable and inclusive*. Connecting agricultural production, processing and trade centres will be necessary to overcome distance, reduce transport costs and improve the commercial case. However, simple transport infrastructure investments are not enough. Especially in the agricultural case, it is necessary to create a critical mass of accessible transport routes and connected agricultural land to generate a commercial case. This means that one main transport route connecting the economic dots on the landscape will not be enough. In fact, in addition, many medium-sized and smaller feeder roads as well as complementary energy, irrigation and storage infrastructure investments are needed. Finally, governments and corridor planners have to make sure investments are sequenced and implemented in a

way that ensure the complementarity, quality and maintenance of these infrastructure investments. Two main approaches can be distinguished: policymakers may target (a) historic corridors or (b) greenfield corridors (Sequeira, Hartmann, & Kunaka, 2014).

Historic corridors, also called brownfield corridors, encompass already existing trade routes and older economic agglomerations that may have fallen into disuse or are sub-optimally used and may need substantial reinvestments (Gálvez-Nogales, 2014). In contrast, greenfield corridors involve the establishment of new trade routes and agglomerations that aim at facilitating the growth of productive capacities in yet underdeveloped and unconnected regions. Each approach has its advantages and disadvantages. Historical corridors rely on an already existing transport and trade network that can be extended and improved while demand for it is secured due to its current use. Upgrading and extending the existing infrastructure of historic corridors might also be the most cost-effective way to create new economic dynamism in a region. Yet, a mere extension and improvement of transport and trade services might not be sufficient to alter the flaws and drawbacks of existing transport networks, address maladjusted and dysfunctional corridor organisations, and eradicate overlapping administrative jurisdictions (Sequeira et al., 2014). Existing corridors may not be able to use the potential of the agricultural sector due to their unfavourable geographical placement. For example, the historic Trans-Kalahari corridor crosses mainly desert. In other cases, some corridors may not be designed to access major African consumer centres, but only trade gateways for exports, such as ports. Export markets are, however, more difficult to access for the majority of African smallholders than national and regional markets.

Thus, in some cases, a clean start with greenfield agrocorridors is necessary to reap the benefits of mutually enforcing, innovative organisational developments and economic synergies between the agricultural sector and the transport and trade sectors. A major drawback of new corridors, however, is the uncertainty of demand for new transport and trade routes. Greenfield investments in transport, trade and economic activities are also highly interdependent and require proper sequencing for triggering growth processes in the region. That is, if investments are not complementary to each other or not substantial

enough in size, greenfield corridors might not reach a critical mass of economic activities and render the corridor economically inviable. Consequently, spatial planners will have to ensure that greenfield infrastructure investments are properly integrated into effective forward and backward linkages in the region. In many low- and middle-income countries, policymakers are likely to have to address problems within old corridors and agglomerations while simultaneously assisting and conducting the development of new corridors. As historic and greenfield corridors operate at different stages of a corridor life cycle, they cannot be considered different types, but they do face different investment costs and growth bottlenecks. Thus, policymakers need to be aware of their corridor target strategy in order to adopt an appropriate treatment for physical infrastructure. Generally, we can say that whereas historic corridors require a new stimulus in organisational development, greenfield corridors are characterised by the need for heavy and sequenced investments in the transport and trade network.

Turning the argument in a positive direction, the agricultural growth concept can avoid the frequent phenomenon whereby transport infrastructure is not used sufficiently and rapidly due to a lack of supply response capacities of the affected agricultural and rural sector. This phenomenon is particularly strong in typical rural sub-Saharan African regions with relatively low population densities, few economically strong private actors, and few public and private services available. Converting existing transport infrastructure projects into agrocorridor programmes can help make them economically more viable.

Beyond making high-quality physical infrastructure investments, governments have to ensure that effective, spatially blind institutions are set in place to regulate infrastructure sectors (transport, energy, water, telecommunications) to counter negative externalities – for example congestion, pollution and safety hazards – and oligopolistic tendencies, which may cause price hikes and low-quality infrastructure maintenance. Finally, in order to facilitate regional and national migration flows, an inclusive agrocorridor approach should also involve the accompanying development of social facilities, for instance, hospitals, childcare and other social services. Especially the local population should be able to reap the benefits of local investments and have access to these social

infrastructures. In warranting their access, SDI investors and planners may increase local ownership and acceptance as well as minimise ethnical tensions with newcomers and migrants.

- *Second, in addition to providing physical infrastructure, the public sector requires substantial and structured efforts to improve the transnational, national as well as regional soft infrastructure to make agrocorridors effective and inclusive*. Although most of the problems associated with agrocorridors are associated with poor trade routes and connectivity, a lack of clear, transparent and effective institutions, regulations and policies also deter investments and hamper regional economic development and cross-country regional economic integration. Hence, governments and agrocorridor planners continuously need to work on a clear, transparent and inclusive legal and regulatory framework that provides crucial public goods, such as political stability and security, the rule of law, access to public services and the environment. Based on former experiences with overlapping and ambiguous legal and regulatory frameworks, it is advisable to promote spatially blind institutions rather than to develop SDI-specific regimes. This is also because, in the past, spatially bound institutions and regulations have been shown to be ineffective in addressing problematic and corrupt customs clearance, tariffs and non-tariff barriers; lengthy bureaucratic procedures; distorting incentives; poor investment promotion; and employment- and environment-related issues. Furthermore, spatially bound institutions and regulations have also created unclear regulatory responsibilities, and therefore contributed to considerable frictions and tensions among public authorities. These institutional and regulatory challenges are also likely to emerge within African agrocorridors. This is because agrocorridors add several layers of institutional complexity due to their regional and/or cross-border design.

  If trade facilitation was a major challenge in the past, it sure will be a problem for transnational agrocorridor development now. Most governments in the past failed to develop efficient trade and customs processes to increase the effectiveness of their economic zones. Addressing trade-related bottlenecks, however, will need to go beyond the introduction of dedicated customs sub-directorate and service agreements between different national customs regimes.

Effective cross-country regional integration will need to address several issues with regards to market access, such as tariffs and non-tariff barriers as well as local market sale restrictions for agriprocessing zones and clusters, in addition to requiring coordination and harmonisation of sector- and product-specific agricultural and food standards and policies. Though some cross-country regional agreements are already set in place to facilitate transnational market access, for instance the East African Community or the Common Market for Eastern and Southern Africa, it remains to be seen how well these agreements will be implemented and whether they gain a new role within the context of agrocorridors (Kuhlmann, Sechler, & Guinan, 2011). Yet, in contrast to former SDIs, which were small in geographical scale, for example SEZs and industrial parks, agrocorridors hold the potential to address these regulatory challenges in a more holistic manner due to their extensive geographical scale and associated national political relevance in connecting several economic agglomerations.

With regards to land market agrocorridors, such as envisioned in the G8 New Alliance initiative, these are likely to cause unprecedented economic and social implications if, and since, they include large-scale land acquisitions. Large-scale land acquisition for modern agricultural production on the one hand, and the need to ensure sustainable livelihoods for the majority of smallholder farmers in most of SSA on the other, pose enormous political and social challenges for governments, regulatory authorities, land planners and administrations. Several international investors originating from industrialised regions, such as Europe and North America, as well as emerging economies, such as China, India, Brazil and South Africa, have recently intensified their search for opportunities to establish agricultural production in SSA, for instance in Ethiopia, Kenya, Ghana and Tanzania (Bräutigam et al., 2010; Kuhlmann et al., 2011). It is against this background that planners of agrocorridors have to be cautious in ensuring they generate socially acceptable results for a number of different actors, that is, investors, smallholders, planners, local workers, etc. Poor land planning as well as the lack of proper land and procedural rights in land deals have led to severe land market distortions, a lack of sustainable investments, and failures to effectively address the concerns of smallholder farmers and local communities. In other cases, massive conflicts arose. In order to

ensure a better land deal for rural communities, stronger land institutions and political commitments within agrocorridors are needed.

In making agrocorridors inclusive and by creating spillovers, governments will also require dedicated cross-sectoral as well as sector-specific policies to link domestic actors with foreign investors and with evolving global agricultural value chains, that is, match-making programmes, public–private partnerships (PPPs), outgrower schemes, etc. The removal of regulatory barriers as well as ineffective linkage and spillover policies at the national level are critical to this process, as are spatially targeted technical assistance and financial incentives for local firms and farmers participating within agrocorridors.

- *Third, agrocorridors require a governance framework that codifies the programme strategy and defines the rules and responsibilities for all public and private stakeholders involved. However, the de facto implementation as well as political economy considerations are of equal importance*. Smart regulations and policies to improve the soft infrastructure of agrocorridors and the broader national environment are not enough if the mandate of institutions is weak and institutional capacities are poor. In the past, many authorities planning, developing, promoting and regulating SDI programmes lacked the political and institutional mandate as well as resources and capacity to carry out their responsibilities properly. Political commitments should therefore be mirrored in the equipment of agrocorridor authorities with regards to expertise, staff and authority. If this is not the case, agrocorridors may be vulnerable to vested interests and unfavourable political economy dynamics, or simply remain paper tigers. Thus, in order to make agrocorridor governance more inclusive, a clear and transparent programme strategy is required that defines the rules and responsibilities of the game and includes the private sector as well as local communities through institutionalised mechanisms. Sustainable programme strategies should also aim for the long game and be continuously supported by high-level political leaders to ensure policy alignment and consistency. Finally, those implementing agrocorridors should learn from former mistakes and set up a framework for M&E to make informed planning and management decisions.

1 Introduction

In recent years, the promotion of economic corridors has gained increasing attention in national and international discussions on attracting investments, stimulating agribusiness development as well as addressing food insecurities and malnutrition in low- and middle-income countries (LMICs) (Gálvez-Nogales, 2014; IAASTD, 2009; World Bank, 2009). Economic corridors consist of existing transport networks, for example roads and railroads, linking several economic agglomerations and other investment areas with transnational and/or regional markets and ports to improve their connectivity and thereby link several urban, semi-urban and rural businesses into a system that can efficiently move raw materials, processed and manufactured goods, services and information across space. Hence, in the agricultural context, economic corridors are assumed to function as an integrated spatial strategy to promote agricultural productivity, efficiency in food production, income increases for smallholders, and overall economic development of rural and land-locked areas. Especially in Africa, where smallholders produce 70 per cent of the total food supply (IFAD & UNEP, 2013; IAASTD, 2009), the integration of smallholders into inclusive and development-oriented agrocorridors appears to be a promising approach to address structural food insecurities and malnutrition. This report understands agrocorridors as agricultural and land-based investments along spatially defined and connected geographical areas. Inclusive agricultural growth and rural development is defined as a pattern of economic growth that provides developmental opportunities and benefits for the poor, especially farmers and other rural stakeholders.

Against this background, the G8 has introduced the "New Alliance for Food Security and Nutrition in Africa" – an international multi-stakeholder partnership including 10 African partner countries,[1] international organisations, as well as international and national agro-businesses[2] – with the aim of unlocking private agricultural investments and integrating them

1 Namely Burkina Faso, Benin, Côte d'Ivoire, Ethiopia, Ghana, Malawi, Mozambique, Nigeria, Senegal and Tanzania.

2 According to the World Economic Forum, this includes: Agco Corporation, Archer Daniels Midland, BASF, Bayer AG, Bunge Limited, Cargill, CF Industries, The Coca-Cola Company, Diageo, DuPont, General Mills, Heineken NV, Kraft Foods, Louis Dreyfus Commodities, Maersk, Metro AG, Monsanto Company, Nestlé, PepsiCo, Rabobank, Royal DSM, SABMiller, Swiss Reinsurance Company Ltd., Syngenta, The Mosaic Company, Unilever, WalUMart Stores Inc., and Yara International.

into broad-based rural development. Based on the idea of building thriving agrocorridors,[3] the private sector is supported in their investments if these are (socially) responsible, meaning they are aligned with the host country's agricultural strategies and carried out in partnership with smallholders as critical market actors (see NAFSNA, 2015). Yet, critics have also argued that it is smallholders that are most likely to lose out on "scaling-up" agricultural production due to land concentration processes, too-high entry barriers into formal agricultural value chains and strong dependencies (Bergius, 2016).

Though agrocorridors are being widely talked about, very little empirical data exists on the performance and inclusiveness of agricultural corridor initiatives in LMICs. Especially in Africa, only a few, if any, implemented cases of integrated agrocorridors can be found, with scant systematic information being collected on their institutional and infrastructural design, their investment as well as economic performance, smallholder integration and potential lessons learnt from good practices and common mistakes. In fact, all corridors of the New Alliance are only just emerging. Currently, agricultural corridors are being implemented in Mozambique – the Beira Agricultural Growth Corridor (BAGC) and the Nacala and Zambesi Corridors under the Pro-Savana Programme – and in Tanzania – the Southern Agricultural Growth Corridor of the United Republic of Tanzania (SAGCOT).

However, although economic corridors constitute a rather new instrument to shape spatial economic development in Africa, there exist other spatial development initiatives, that is, spatially organised economic development schemes that have longer track records. Accordingly, analysing and learning from former economic spatial development initiatives, including some empirical cases of economic corridors, in Asia, Latin America and Africa, might guide governments and policymakers in shaping economically viable and inclusive agrocorridors in sub-Saharan Africa (SSA).

3 The Norwegian fertiliser giant Yara first presented the Agricultural Growth Corridor concept at the United Nations Private Sector Forum in New York in 2008, joined by representatives of the Food and Agriculture Organization (FAO), the International Finance Corporation of the World Bank, the Alliance for a Green Revolution in Africa and others (Jenkins, 2012).

Table 1: Overview of existing (historical) corridors in SSA	
Corridor name	**Countries involved**
Abidjan – Ouagadougou Corridor	Côte d'Ivoire and Burkina Faso
Beira Agricultural Growth Corridor	Mozambique
Central Corridor	Tanzania, Burundi, Democratic Republic of Congo (DRC), Rwanda and Uganda
Coast-to-Coast Corridor	Mozambique, Swaziland, South Africa, Botswana and Namibia
Dajar-Touba Corridor	Senegal
Gauteng City Region Corridor	South Africa
Greater Ibadan Lagos Accra Corridor	Benin, Ghana, Nigeria, Togo
Lamu Growth Corridor	Ethiopia, Kenya and South Sudan
Maputo Development Corridor	Mozambique, Malawi and Zambia
Northern Corridor	Kenya, Uganda, Burundi, Rwanda and the DRC
North-South Corridor	South Africa, Zimbabwe and Zambia
Southern Agricultural Growth Corridor of Tanzania	Tanzania (plus Zambia and Malawi)
Source: Adapted from Gálvez-Nogales (2014, p. 26)	

This report defines spatial development initiatives (SDIs) as an integrated economic policy approach of spatial planning with the aim of developing business and investment environments in specific areas. Though visions of SDIs can differ greatly, this report broadly sees their contribution in driving economic dynamism, inducing wealth generation, driving job creation and potentially minimising spatial disparities between a territory's core and periphery. There exist several types of SDIs, which differ in their principal objectives, geographical scales as well as sectoral and industrial focus. This report covers five types of SDIs: (1) special economic zones (SEZs), (2) technopoles and science parks, (3) industrial parks, (4) clusters and (5) economic corridors.

There has been a long debate over the years as to whether SDIs are an effective policy instrument (World Bank, 2009). Consequently, in light of

new developments in fostering agrocorridors in SSA, the main objective of this report is to analyse the potentials and pitfalls of SDIs. Although knowledge deficits remain, this study offers guidance for policymakers and development practitioners who wish to leverage the potential of agrocorridors for inclusive agricultural growth and rural development in SSA. Undertaking a review of the recent evidence, the focus is on a number of different SDI typologies in LMICs, which includes policy-initiated as well as natural-grown economic agglomerations.

In order to define the role and investigate the potential of SDIs in inducing private investments, economic dynamism and employment creation, this study addresses the three following questions:

- Economic performance of SDIs: What are the factors driving private investments, exports and employment in SDIs, and what are potential constraints within the context of SDIs? When do SDIs facilitate economic upgrading, technology and knowledge diffusion and contribute to more structural transformation processes?
- Social and environmental performance of SDIs: Under which conditions does economic performance within SDIs lead to improvements in job quality and the integration of local stakeholders, in particular small businesses and farms? How can negative social and environmental externalities be minimised? Also, what does it take to warrant the interests of local, in particular rural, communities?
- What are the policy lessons and implications for agro-corridors?

The study shows that for SDIs to be successful, we can identify several necessary but no sufficient conditions. In fact, only a very small group of SDIs – mostly in East Asia and some Lain American countries – have been successful in achieving their intended goals. Within the African context, most zone programmes show low levels of investment and exports, and very moderate employment impacts. In fact, many programmes have even shown signs of stagnation and decline. Overall, evidence suggests that the economic as well as social performance of SDIs is inherently linked to the quality of the national investment climate. It is also argued that there are several factors that constrain an SDI's effectiveness. *First*, the role of physical and economic geography, that is, poor location, small market size and low market demand, should not be understated. *Second*, the lack of good quality physical infrastructure, effective regulatory infrastructure

regimes as well as social infrastructure contributes to the underperformance of many SDIs. *Third*, several deficits in the SDI-specific and national soft infrastructure impede the performance and sustainability of SDIs. *Fourth*, a variety of governance failures as well as political economy factors impact on the sustainability of spatial development approaches.

In line with these insights, the report argues that there are several reasons as to why agrocorridors are likely to be *more* effective than former SDI experiences in the African context; however, their sustainability and potential for scaling-up depend, to a great extent, on how governments can overcome successfully the mentioned old challenges and anticipated new issues.

The remainder of the report is organised as follows: Section 2 introduces the theory behind SDIs as well as presents an overview of its different typologies and global experiences. Furthermore, this section also lays out a conceptual framework with which to investigate the performance of SDIs across LMICs. A short overview on critical performance criteria follows. The factors impacting the performance of SDI are discussed in Section 3. Section 4 critically examines the policy lessons and implications from former SDI approaches and applies them to agrocorridor development in sub-Saharan Africa.

2 Spatial development initiatives in low- and middle-income countries

Empirical evidence suggests that economic development is uneven across space at a local, regional and national scale (World Bank, 2009). There exist stark geographical differences in economic density, living standards and incomes, making geographical location a strong predictor of prosperity and poverty across and within countries (World Bank, 2009). Because of these disparities, governments across the world have adopted visions of spatial development. This report defines spatial development broadly as a normative concept which aims to drive inclusive development, that is, which aims to achieve a convergence in living standards and to balance economically disadvantaged or lagging areas with leading and dynamic places within a country or a transnational region, that is, a region crossing two or more national borders. Spatial approaches differ from sectoral policies, as the latter always focus on the national territory as a whole. In contrast,

spatial approaches focus on a multi-layered approach, that is, involving infrastructure, economic, social and environmental investments, to drive the development of a geographically defined region. Here, region is defined as an area of sub- national extent focused on a central agglomeration – or agglomerations – together with a surrounding hinterland in the immediate vicinity. Thus, spatial approaches also differ in their complexity from the isolated spatial economic policies of regional or local authorities.

Spatial planning as well as territorial development policies are foremost instruments to achieve spatial development. They aim to address, shape and balance the geographic distribution of populations and their economic, social, cultural and environmental activities in a way so as to strengthen the common good. With regards to economic development, this involves concrete policy targets such as increases in private-sector or educational investments, productivity growth, employment growth and increases in incomes as well as overall wellbeing. Yet, spatial planning does not mean that every place within a country should have exactly the same living standards. Indeed, studies have shown that prosperity may not come to every area or region at the same time (Farole, 2012, 2013). Although spatial planning cannot ensure identical spatial development trajectories, it promotes basic access to public services, infrastructure, jobs and environmental quality across a specific territory. It thereby addresses various policy goals at the same time (UN [United Nations], 2008):

1. driving local economic dynamism
2. maintaining territorial cohesion and convergence
3. ensuring environmental quality

Especially between the first and the second goals, as well as the first and the third, spatial planners may be confronted with persistent or temporary trade-offs. Fast economic growth in one region affects the overall cohesion within a country and may simultaneously affect the environmental quality of growth areas and neighbourhoods. Thus, against the background of different spatial development dynamics, policymakers need to clarify to what extent and under which conditions places, areas or regions may deviate from the norm, that is, the average level of living standards in a given (national or regional) territory, without relativising or completely disrupting the goal to achieve territorial convergence and cohesion. This balancing act offers room for debate over the scope, scale and feasibility of spatial planning. Clearly, the

scope, scale and feasibility of spatial planning and spatial approaches vary greatly across countries, yet, there exist similarities.

With regards to *scope*, spatial planning is the distinct responsibility of public authorities. Above all, the central responsibilities of spatial planners include: shaping a territory's physical endowments; determining and regulating various land uses and land rights; coordinating and harmonising various cross-sectoral regulations and sector-specific policies, for example transport, energy, agriculture, industry and education; and promoting investment opportunities (Koresawa & Konvitz, 2001; UN, 2008). As a result, spatial planning constitutes a cross-sectoral concern covering several policy areas and responsibilities such as economic, industrial, agricultural and social policies and frameworks.

With regards to *scale*, spatial planning often involves a multi-level process that runs the risk of coordination and duplication failures between national, regional and local public bodies, such as national ministries and municipalities. As a consequence, effective spatial planning requires a clear division of responsibilities in accordance with the different levels of a country's administration (UN, 2008). Generally, these hierarchically organised levels are national, regional and local:

- *National level*: Governments set the framework conditions for the design, operation and implementation of spatial planning at all levels, urban and rural. This involves legislative functions and the establishment of national regulations and policies across and between sectors. By setting national guidelines, national-level authorities coordinate and support spatial planning between regional and local authorities, but they also initiate and monitor planning processes within national boundaries. National planning bodies are responsible for overall economic growth and social cohesion within a country and monitor their overall spatial development. These bodies offer political leadership, but may also offer supportive resources and expertise for economically lagging areas.
- *Regional level:* Not every country has regional, that is, sub-national, governments or comparable regional public bodies. However, the main task that can be found at the regional level is the development of a regional spatial development strategy that is medium- or long-term in nature. This task may be administered hand in hand with relevant national and local bodies and municipalities to share information as well as to harmonise overall developmental priorities with regards to designated

areas, infrastructure development, environmental and other relevant considerations. Furthermore, regional authorities provide guidance and assistance for their designated local bodies and municipalities in implementing national and regional guidelines. There may also exist regional bodies that work in cooperation with national authorities on developing a transnational region, that is, a region crossing two or more borders. In this case, a regional authority's work may address a sub-national and transnational level simultaneously.

- *Local level*: In compliance with regional and national guidelines, it is a local body's task to introduce local (industrial) developmental priorities, adapt and implement relevant planning instruments, and coordinate with neighbouring local authorities to develop a mid- to long-term plan for its administrative local territory. This also involves the development of land-use and zoning plans as well as communal land use planning.

The *feasibility* of spatial planning depends on a country's needs as well as its capacity to manage and execute spatial policies. If a country has a relatively homogenous spatial landscape, some might argue that spatial planning is redundant and not the most cost-effective way to facilitate economic dynamism. Nonetheless, theory suggests that spatial growth dynamics eventually lead to spatial disparities, and empirical evidence also clearly supports the fact that spatial disparities exist in various intensities across all countries (World Bank, 2009). However, spatial planning in itself will not ensure results; rather, a lot depends on its design, management and execution. As regulations and policies are judged by their (cost-) effectiveness to facilitate and achieve an intended net change, for example economic investments and employment growth, regular reviews of a spatial planning programme's outcome constitute a crucial factor in deciding whether certain measures and programmes are suitable to address intended policy goals. Spatial planning requires interdisciplinary cooperation between different levels of public authorities and departments. Thus, spatial planning may suffer from coordination, cooperation and communication failures, and thereby create substantial operation costs. Furthermore, the unequal treatment and resource allocation between regions may lead to political tensions and conflicts. In some cases, spatial planning may suffer from political capture and promote prosperity for a small group rather than for the majority of the population. In sum, there exist a number of potential drawbacks to spatial planning and regional development instruments, including SDIs.

SDIs are economic instruments that may be used for spatial planning and regional development policy. Although no uniform definition of SDIs exists, they are characterised by a number of features (Koresawa & Konvitz, 2001; Luiz, 2003; UN, 2008):

- *Geographical focus*: SDIs are bound to a specifically defined geographic territory, that is, a place, area, or region, or refer to other, more loosely defined geographical patterns, for example linkages and networks within an area or a region. However, there are exceptions. Though SDIs are mainly organised as enclaves, there also exists the single factory model. Whereas the enclave model involves the licensing of investments within a spatially confined area, the single factory model allows firms to license their individual factors that might be located outside of a bound geographical area.
- *Mid- to long-term strategy*: SDIs are based on a broad mid- to long-term strategy bringing together economic, social and environmental considerations. Though comprehensive in nature, the focus of SDIs is often to foster economic activity by assisting businesses to gain advantages from co-locating.
- *Multi-level and multi-issue interventions*: SDIs are characterised by policy efforts at the national, regional and local levels. In this way, SDIs aim to address multiple developmental challenges simultaneously that cannot be tackled in an isolated manner. They often involve larger infrastructure investments to increase accessibility, the provision of targeted business development services and investment incentives in a particular geographical area as well as include interventions to increase access to information and knowledge locally. Although primarily designed to boost regional growth, SDIs also claim to reduce negative environmental externalities and preserve cultural heritage.
- *Policy integration and policy coherence*: In order to address several developmental bottlenecks, SDIs are integrated into broader spatial planning strategies and align with the wider institutional framework and different sectoral policies – for example transport, energy, economic and industrial policies – for a defined territory. In this way, SDIs aim to harmonise and make the most of the spatial implications of industrial, trade and other sectoral policies, which, together, advance the comparative advantage of particular areas or regions.

- *Stakeholder involvement*: In order to enhance economic opportunities for productive private investment, SDIs are characterised by strong private stakeholder involvement. Although public authorities often build the framework conditions for the co-location of economic activities, it is private actors, that is, corporations, small and medium enterprises (SMEs), communities and individuals, that bring agglomerations to life, create wealth and offer employment opportunities. Accordingly, identifying and including the relevant private stakeholders in the spatial development process is of vital importance to the success of SDIs in a particular area or region. Private stakeholders may include business associations and industry representatives, private investors (large and small), non-governmental organisations (NGOs), community representatives and individuals. These may be included at various stages – at the point of policy design, decision-making, implementation and monitoring – and in various functions: as partners, technical experts or consultants, or as representatives for one or more groups involved.

There exist several types of SDIs, which differ in their principal objectives, geographical scales as well as sectoral and industrial focus. Although these initiatives are not necessarily mutually exclusive concepts and may be combined with each other, they have distinct objectives and features. Recently, agrocorridors have evolved as a potential spatial approach to foster development in agriculture, agribusiness and agriprocessing industries in rural sub-Saharan Africa. So is there an empirical case for promoting SDIs?

Looking at SDIs in LMICs, this section shows that their overall performance tends to be mixed. Although the contribution of SDIs towards attracting investments and facilitating exports across LMICs is substantial, their role in driving employment, economic upgrading, technology transfer and employment quality is less clear. Within the African economies, most zone programmes have largely failed to perform under most criteria. With some exceptions in Ghana and Kenya, most economic zones in Africa show low levels of investment and exports, a lack of economic and technological upgrading as well as poor employment-related outcomes. In fact, many programmes have shown signs of stagnation and decline.

The aim of Section 2 is to elaborate briefly on the theoretical and conceptual underpinnings of spatial development and SDIs. First, this involves a short introduction to the economy theory behind spatially oriented development concepts. Second, an overview of different SDI typologies and global experiences is given. Third, a conceptual framework

to assess SDIs is presented according to short-, medium- and long-term performance objectives. This section also contains a short review of the performance and dynamics of SDIs across LMICs with a special focus on sub-Saharan Africa.

2.1 Uneven development and economic geography – a case for spatial development?

For many years, conventional economics has been characterised by the view that the role of geography, that is, the impact of space and geographic conditions on societies' economic activities, is negligible (Nordhaus, 2006). Yet, across countries, evidence suggests an increase in economic activity closer to more temperate and coastal areas, as compared to tropical and land-logged regions (Bloom, Sachs, Collier, & Udry, 1998; Mellinger, Sachs, & Gallup, 2000; Nordhaus, 2006; Sachs, 2001; World Bank, 2009). Within countries, location appears to have a stronger impact on living standards in poor countries than in wealthier ones (World Bank, 2009, pp. 2ff.). For example, in terms of incomes and living standards, geographical differences within poor countries, for example Ghana, Indonesia or Morocco, are more pronounced than in wealthier ones, for example Canada, Japan or the United States (World Bank, 2009, pp. 2ff.). Indicative evidence suggests this is explained by different forms of public-income distribution and social welfare programmes. However, as countries grow richer, location also becomes more important for firms, since economic activities tend to concentrate close to existing agglomerations. For example, 5 per cent of Poland's total space contributes nearly a third to the gross domestic product (World Bank, 2009, pp. 2ff.). As a result, those areas neighbouring dynamic economic centres are more likely to benefit from positive spillover effects; the same "neighbouring effect", but with a negative sign, has been found for areas in proximity to instable or economically lagging areas.

These observations imply that geographic attributes, that is, a location and its physical endowments, have a crucial role to play in explaining processes of economic development. However, within the discipline of economics, there exists a controversial debate on the impact of geographic attributes on economic activity and performance. These views have, in turn, strong implications for the assessment of the potential that is attributed to the use of regional policy measures, for instance spatial development initiatives, with the goal of balancing uneven development.

In order to build the theoretical basis for subsequent discussions, the following paragraphs present three major views on the role of geography in economic development: (1) geographic determinism, (2) institutionalism and (3) economic geography.

1. Geographic determinism

A number of authors argue that geographical endowments – that is, climate, location, resources, environmental stability (e.g. disaster risk) – are a central reason for unevenness in economic development (Bloom et al., 1998; Collier & Gunning, 1999; Diamond & Ordunio, 1997; Easterly & Levine, 2002; Mellinger et al., 2000; Sachs, 2001). In this view, physical attributes are tied to specific locations and exogenous – that is, physical – attributes are largely unaffected by human activities within decadal time scales. Some of the most vocal to argue that economic development is historically tied to geography were Diamond and Ordunio (1997). Because of the prevalence of patterns of successful human settlements along the world's east-west climate axis rather than the world's north-south climate axis, they speculated that certain locations are more conducive to economic development than others. Settlements on the more temperate world's west-east axis allowed the development of sophisticated farming, the maintenance of a variety of staple crops as well as the domestication of animals (Diamond & Ordunio, 1997). Furthermore, compared to the east-west axis, the expansion of agriculture, the dissemination of farming technologies and progress on medical treatments is hindered by the more heterogeneous climates along the north-south axis. Similarly, others argue that tropical geography has a substantial negative impact on economic output and output per capita compared to temperate regions (see also Bloom et al., 1998; Mellinger et al., 2000; Nordhaus, 2006; Sachs, 2001). In particular, they examine the spread of diseases (e.g. Malaria), landlockedness, soil ecology as well as the conditions for livestock breeding in tropical Africa. They come to the conclusion that Africa has a disadvantageous geography, which has far-reaching implications on modern African economies, agriculture and food production (Bloom et al., 1998; Mellinger et al., 2000; Nordhaus, 2006; Sachs, 2001). The disadvantageous geography is further reinforced by Africa's colonial heritage of splitting the continent into 48 sub-optimally endowed states (Collier & Gunning, 1999). In sum, trying to understand the economic problems of Africa, proponents such as Sachs and his colleagues speculate that geographical factors may have adverse indirect (i.e. through

historically shaped settlements and institutions) as well as adverse direct effects (i.e. via landlockedness and climate, sanitary and health conditions) on economic development, and therefore explain economic backwardness and unevenness. In geographic determinism, location remains the most important factor at all stages of economic development for people, but especially for firms (first-nature geography explanation). This is because the "what" and "how" of economic production and consumption are inextricably linked to location decisions (i.e. "where" to produce and consume).

2. Institutionalism

Geographic determinism has been criticised for theoretical and methodological reasons; however, the most outspoken opposition has come from concerns over the relative importance of institutions in economic development. Institutionalists argue that geographic conditions and subsequent settlement patterns in the new colonies (e.g. the British in North America) led to the growth of good institutions, which in turn had a long-run impact on economic growth, development and high incomes (Acemoglu et al., 2001; Rodrik et al., 2004). According to Acemoglu et al. (2001), good institutions were those that respected and protected property rights and the rule of law as well as those that acted as an enforcing agent of private contracts. They support their claim by showing that countries that were wealthier in 1500 (as measured by population density or urbanisation rates) are the ones that are less developed now (Acemoglu et al., 2001, 2002; Engerman & Sokoloff, 1997, 2001; Sokoloff & Engerman, 2000). This "reversal of fortunes" demonstrates the primacy of institutions over geography (Rodrik et al., 2004). As a result, they conclude that bad geography can be overcome by good institutions.

A more moderate institutionalist position is represented by Banerjee and Iyer (2002), whose argument considers both factors – geography and institutions – and their indirect as well as direct impacts on long-run growth via history. According to them, the accumulation of historical events matters, as these shape institutions and later, in turn, shape the economy. Within this historical perspective, the aggregated wealth and human capital differences between nations are explained due to long-running processes of "increasing returns". The better the foundation of geographical endowments and institutional quality, the more likely a country is to get ahead. However, although they agree that institutions in the past have been shaped by their environments and colonial experiences, they also state that their relevance

is not exclusive. Uneven economic development today is still explained by a number of factors, such as institutions, governance, policies and the environment.

3. Economic geography

Descriptive economic geography has been a flourishing field under the discipline of geography for decades; neoclassic economics and modern economic growth theories have typically omitted exogenous factors such as location or physical endowments. Rather, policy factors such as capital formation, labour, education and technology were emphasised. In the late 1990s and early 2000s, many others argued that with the rise of new information and telecommunication technologies and the globalisation of economic production, the new millennium would witness a "shrinking world", and therefore location as well as other physical factors might lose relevance (Friedman, 2005; O'Brien, 1992).

However, in the 1990s, economic geography experienced a grand entrance into mainstream economics. Krugman's work (1991a, 1991b) on the "new" economic geography (NEG) and a wave of further economic studies investigated how random historical incidents and gradual changes in the underlying parameters of locations could produce discontinuous transformations in spatial structures (Baldwin, Martin, & Ottaviano, 2001; Martin, 1999, 2000; Ottaviano & Puga, 1998; Venables, 1996). What was "new" about the NEG [4] was the attempt to synthesise the works of traditional economic geography into a unified and empirically testable, theoretical core-periphery[5] model as well as to highlight the role played by transport costs, economies of scale and market size (Krugman, 1991a, 1991b, 1993). The core-periphery model has been heavily criticised by

4 Due to critical voices of traditional economic geographers, Krugman later changed the term NEG into geographical economics (see also Krugman, 2011; Neary, 2001).

5 The core-periphery model was driven "by the interaction among economies of scale, transport costs, and market size. Increasing returns at the plant level created an incentive for geographical concentration of the production of any given good; transport costs created an incentive to locate plants close to large markets (and large sources of goods from other plants); but the location decisions of producers themselves determined the location of large markets. Under the right circumstances, this could produce a circular causation in which concentrating production fed on itself. But that wasn't a necessary result, because the pull of market size was opposed by the force of dispersed natural resources" (Krugman, 2011, p. 10).

traditional economic geographers for contributing nothing "new" to the discipline, for being too focused on the past and stubbornly quantitative as well as being too simplistic (Krugman, 2011). Yet, though this critique might be partly appropriate, by now, geography has become a major concern in development economics, and the works of the NEG gave rise to interesting cross-disciplinary research, for example on regional innovation systems, clusters and learning regions (see Anselin, Varga, & Acs, 1997; Asheim & Isaksen, 1997; Audretsch & Feldman, 1996; Varga, Anselin, & Acs, 2000; World Bank, 2009).

The central argument of economic geography is that, due to economies of scale, spillover effects and complementarities, small initial differences[6] between regions are, over time, likely to produce large disparities ("second-nature" geography) (see also World Bank, 2009). For economic geography, location matters; however, this does not mean that geographical endowments determine the destiny of a country or region. In a nutshell, economic geography incorporates a number of factors relevant for explaining uneven economic development across space: geographical endowments, institutions, policies and more. In order to understand and shape economic development at various spatial scales, it should be understood that economic geography is not driven by "one" explanatory model. Rather, it should be seen as an analytical lens aiming to study the underlying forces and cumulative dynamics of spatial differentiation and concentration. In order to introduce the discipline's "jargon", a short introduction to the most important theories and concepts is presented in Box 1.

Box 1: Location theory, agglomeration economies and cumulative causation

Location theory: Production factors cannot move "freely" over space. Moving people, machinery, materials or goods over geographical distance usually involves a cost – transport costs. In the case of labour, the costs of travelling to work is to be considered, as are the costs of firms to move raw materials from the source to production and from production to final consumption. Accordingly, for people and businesses that seek to maximise profits and their self-interest, location in space is an essential factor in their calculated decision-making.

6 These initial differences can be due to geographical endowments (e.g. population density, climate, access to water, etc.) *and* the presence of physical, human or financial capital (World Bank, 2009).

Box 1 (cont.): Location theory, agglomeration economies and cumulative causation

As a result, the level of attractiveness of a destination is associated with the size of its market, that is, its volume of economic activity in terms of population size, income, purchasing power, gross domestic product or other similar characteristics. The assumption is that the bigger the market, the better the firm's prospects for low transport costs and profitability. Evidence suggests that when one region is larger in terms of population and/or purchasing power, this region attracts a more than proportional share of firms (Krugman, 1991a, 1991b). Thus, in the case of manufacturing, production will tend to concentrate where there is a large market, but the market will also be large where production is concentrated (Krugman, 1991a, 1991b). This process is called circular cumulative causation (please see below). However, depending on their goods and services offered, firms will have differently sized market areas. High-value goods and services, for example cars, furniture and highly specialised medical services, that are purchased infrequently will have a larger market area as a minimum operating threshold, whereas for low-value and frequently used items, for example food, repair services and hairdressing, a smaller market area will suffice in order to operate (World Bank, 2009).

Agglomeration economies: A consequence of location theory is that firms inevitably end up locating close to (or directly within) large markets, and therefore, close to each other. This co-locating or clustering of firms offers economies ("beneficial savings"). Economies of scale are concerned with the reductions in cost per unit resulting from increased production. Agglomeration economies build on the beneficial dynamics of internal as well as external economies of scale.

Internal economies of scale, that is, scale economies internal to the firm, occur through major productivity gains that are achieved by introducing a division of labour and specialisation. The bigger the operation, the higher the level of labour productivity that can be achieved, which in turn provides the firm with higher rates of profits or returns on investment. In other words, a firm achieves increasing returns to scale. However, returns to scale cannot increase for an indefinite period of time. At some point, firms experience decreasing or diminishing returns to scale. This happens when there is not much to gain by employing additional workers or producing more goods, as the existing workforce or production is already covering all the tasks in an efficient manner. This is because the larger a firm or organisation becomes, the more complex and costly is its management, leading to diseconomies of scale, that is, disadvantages that come with increasing size such as communication and coordination problems, administrative inefficiencies and principal-agent problems. A related concept of economies of scale is *economies of scope.* Scope economies occur when a firm gains savings by producing or offering different, but complementary, goods or services.

Box 1 (cont.): Location theory, agglomeration economies and cumulative causation

External economies of scale, that is, scale economies derived from factors outside the firm, occur if clustered firms, that is, firms in geographical concentrations (agglomerations), benefit from a division of labour between firms. For example, firms may outsource certain specialised tasks that can be produced cheaper by another specialised firm, rather than in-house. Marshall (1890) was the first to describe the beneficial markets of supply and demand within agglomerations of firms – the latter often being called "industrial districts". Additionally, he identified labour market pooling and knowledge spillovers as further important advantages of clustering. Especially the latter plays a central role in not only driving cost reductions, but in promoting enhanced innovation at the level of firms and whole industries (Cohen & Morrison, 2007; Etzkowitz & Leydesdorff, 2000; Lundvall, 1992). Especially knowledge spillovers are theorised to play a central role to drive local economic development (Bathelt, Malmberg, & Maskell, 2004; Leydesdorff, 2000). Although many argue that formal, codified knowledge is largely available and accessible as a result of advances in modern information and communication technologies, informal and tacit know-how often remains bound to particular economic and spatial contexts (Friedman, 2005; O'Brien, 1992; Sonn & Storper, 2008). Consequently, complex and tacit knowledge becomes more valuable in modern economies by nature, especially for highly dynamic and competitive agglomerations, such as in cities. Spatial proximity is therefore crucial for transferring, absorbing and applying knowledge (Storper & Venables, 2004).

In the literature, agglomeration economies are further divided into localisation economies and urbanisation economies (Coe, Kelly, & Yeung, 2007; Dicken & Lloyd, 1990). *Localisation economies* are agglomeration economies that occur between specialised suppliers, sub-contractors, competitors or collaborating parties within a single industry who are co-located in a particular area (e.g. a particular food industry (dairy, vegetables, etc.), car industry or financial services industry). *Urbanisation economies* refer to agglomeration economies that provide benefits to all firms across industries within one area, for example a city, or a rural agglomeration. The existence of a thriving cross-industry agglomeration presupposes an area with a substantial size with a number of various markets. This is, for example, the case in cities. Although localisation and urbanisation economies are not always easily distinguishable in practice, the latter are often used as legitimation for extensive cross-industry policy measures. Both types of agglomeration economies offer some of the following benefits: the collective use of transport and communication infrastructure, access to skilled labour and technical colleges and/or universities (offering relevant training), access to research facilities and proximity to ancillary industries (offering raw materials, components, tools and machinery, or specialised services) (Dicken & Lloyd, 1990; Marshall, 1890).

Box 1 (cont.): Location theory, agglomeration economies and cumulative causation

However, there exist barriers of size and function when it comes to benefiting from external scale economies. Although it may be easy to have internal scale economies in towns due to lower transport costs, these towns might not be large and diverse enough to generate external scale economies (World Bank, 2009). Whereas localisation economies require functional diversity within one industry, urbanisation economies need richness in a number of supply and demand markets catering to various industries. Thus, co-locating or clustering per se does not produce external economies of scale for firms. The latter are depending on size as well as on functional diversity, that is, the effective provision of supply and demand markets within or across industries. For example, the clustering of a number of micro and small petty traders and manufacturers will not necessarily induce knowledge spillovers and innovation if a cluster lacks specialisation, complementarity and overall competitiveness (Altenburg & Eckhardt, 2006; Giuliani, 2005; Sonobe, Akoten, & Otsuka, 2009; Sonobe, Higuchi, & Ostuka, 2012; Weijland, 1999). This has strong implications for the design of industrial districts, spatial and regional policies, and infrastructure development.

Cumulative causation, that is, a circular chain reaction, is a process or sequence of events that is driven by location theory, transport costs and scale economies, and it will eventually lead to a greater polarisation between rich and poor regions, and therefore produce uneven spatial and economic development (Kaldor, 1970, 1981; Myrdal, 1957). Those regions with strong agglomeration economies will experience a virtuous circle of growth and development by which jobs are created through new and/or expanding firms. This, in turn, will increase local demand for goods and services, further drive supply markets, expand the local tax base and allow for increases in public infrastructure investments. The latter supports external economies of scale and makes the location even more attractive to new firms and labour (Dicken & Lloyd, 1990). In this case, circular and cumulative causation reinforce increasing returns at the level of a whole agglomeration. However, this happens at the expense of lagging regions. Cumulative causation also reinforces the loss of attractiveness of poorer, economically less attractive regions. For example, the market exit of a firm in a less favoured region or the relocation of a firm from a less favoured to a more favoured region generates a similar, but negative, chain reaction: the loss of jobs, a decrease in local spending power and demand, a smaller tax base and fewer public investments. This, in turn, affects the relative attractiveness of advantaged regions, leading to further out-migration from lagging to leading regions – the "backwash effect" (Myrdal, 1957). The outcome of such a polarised spatial pattern is referred to as core-periphery (Krugman, 1991a, 1991b).

Box 1 (cont.): Location theory, agglomeration economies and cumulative causation

Economic geography assumes that, at some point, agglomeration economies will diminish – thus, the relationship is non-linear. Negative externalities, such as sharp price competition, the costs of labour and land, as well as pollution and congestions, will encourage some firms to spread, decentralise or completely relocate their operations in less crowded places ("spread effects"). Relocations might also happen, as transport costs are substantially reduced, and allow a firm to widen its market area. Nonetheless, evidence suggests that spread effects are weaker than dynamics of concentration. According to the World Bank (2009), concentration is the rule. Thus, the experiences of high-income countries as well as recent studies in economic geography suggest that market forces on their own will reproduce existing inequalities along various spatial scales – locally, nation-wide, across regions and the globe (World Bank, 2009). Theory and empirical evidence suggest that as a country or a regions grows, productivity differences between lagging and leading regions will grow stronger, as will employment levels and wage gaps. Eventually, due to changes in cost structures within agglomerations, out-migration of certain firms will integrate lagging areas – but only those areas will be integrated first that are the closest to existing agglomerations or have another competitive advantage, for example access to certain natural endowments. In this way, the integration occurs non-linearly in wave after wave (Farole, 2012, 2013). As a result, a steady development process of all places at the same time is unlikely.

Source: Author

So how do we align these three views on the role of geography? As spatial dynamics show, a landscape of economic concentration on the one hand, and lagging areas falling farther behind on the other, policymakers are interested in the promotion of economic convergence. However, how much can national governments and local authorities influence geography, spatial dynamics and economic development? What can areas lagging behind – especially in rural areas – do to catch up? Is there a case for spatial development?

The understanding of the role played by geographical, institutional and economic factors on the (long-run) process of economic development is a key element in shaping development policies. As a logical consequence of geographical determinism, Sachs and colleagues argue for the direct mitigation of existing geographical and environmental constraints in order to minimise a geographically disadvantageous situation (Easterly & Levine,

2002; Mellinger et al., 2000; Sachs, 2001). This policy prescription is based on the assumption that poor growth is caused by a mutually enforcing poverty trap rather than due to bad governance and a lack of good quality institutions. The latter factors play a central role for institutionalists who proclaim institutional and regulatory reforms as a solution for uneven development. Although those promoting institutional approaches see a huge potential in policy initiatives and institution-building, Sachs (2001), in contrast, proposes a big push of financial resources, sufficient vaccination, medical services, and proper water and energy infrastructure to stimulate economic growth and development. However, a big push in financial expenditures is at odds with the large amount of literature in political science and economics that highlights various forms of market failures as well as the social causes of poverty, for example exclusion of the poor. Stable and sound institutions are required to address these failures and ensure inclusion of the poor and marginalised to promote overall inclusive economic development. Indeed, against the background of recent economic developments in resource-rich countries such as Nigeria, Angola and Mozambique, many have argued that wealth in natural resources such as minerals, diamonds or other geographical resources constitutes more of a "curse" for the poor than a blessing (Brunnschweiler & Bulte, 2008; Friedman, 2005). This is because of the Dutch disease, rent economies and a lack of investments in other productive sectors or industries. As a result, inclusive institutions and well-designed economic and investment policies are seen as a means to tame the exclusionary and destructive tendencies of resource-rich economies.

In sum, considering the pace of institutional change and reform, economic and social policies as well as development initiatives have to consider the role of geography in spatial and economic dynamics. Insights from economic geography show that transport costs and agglomeration economies matter for tackling uneven economic development (World Bank, 2009). The cumulative and path-dependent process of resource- and knowledge accumulation at various scales produces positive and negative externalities that strongly impact on the distribution of wealth across space. In other words, the world is not flat but full of potholes, lumps and bumps. Thus, the great emphasis given by institutionalists to governance and sound economic policies should go hand in hand with a real commitment to address specific regional circumstances and subsequent spatial dynamics. This is even more important as a fast economic convergence between national regions is

often a major policy objective of national governments that wish to alter the unevenness between nationally leading and lagging places and regions to reduce inequality and migration, which may lead to social and political instabilities. However, market forces and the dynamics of agglomeration economies and the resulting cost structures will dictate, to a large degree, where economic dynamism will take place. Rather than working *against* regional disparities, policymakers need to work *with* spatial disparities and adopt adequate spatial economic policies to promote realistic and suitable visions of spatial development for a particular area or region. This involves an alignment with market forces and trends, rather than working against them.

The following subsection elaborates on the concept of spatial development, spatial planning and subsequently discusses various forms of SDIs.

2.2 Typologies and global experiences

Spatial development and territorial cohesion have become a central policy objective of national governments in most parts of the world. This report will define "spatial development" as a normative concept which aims to drive inclusive development, that is, which aims to achieve a convergence in living standards and to balance economically disadvantaged or lagging areas with leading and dynamic places. This involves not only attempts to address national disparities, but also those between regions spanning across national borders. For example, as the world's largest cross-country regional integration and spatial development project, the European Union (EU) has an astounding track record of spatial development programmes as well as spatially sensitive economic and social policies (ESDP [European Spatial Development Perspective], 1999). In particular, the EU has become a policy lab for the administration and implementation of a multi-issue, trans-border spatial development approach, such as the EU structural funds programme encompassing a social and agricultural spatial development focus (ESDP, 1999).

In middle-income countries, the development of city-regions has been a dominating practice in spatial planning. Starting in the 1950s and 1960s, these "growth pole" investments in urban infrastructure and propulsive industries aimed not only to benefit urban populations, but to induce a more general growth impetus for the city hinterlands (Parr, 1999a, 1999b). For example, the sub-national region of Shanghai as well as the transnational city pair of

El Paso, Texas, and Ciudad Juarez, Mexico, show a successfully executed growth pole strategy that induced local, regional as well as national economic dynamism (Hanson, 2001; Li & Wu, 2006). Unfortunately, these positive experiences were one of the few among many failures. The relative success or failure of growth pole strategies is often associated with bad locational choices, unfavourable land-ownership structures, national policies, global economic trends, and local social and political relations. Also, many growth pole strategies had short planning horizons, were ambitious, poorly designed and lacked the administrative capacity. Whereas spatial development concepts and initiatives in high- and middle-income countries have matured in the last decades, many low-income countries, especially in SSA, have had only very few experiences with spatial planning and more complex spatial development initiatives, such as economic corridors.

A country's development stage is of central relevance to the conceptualisation and definition of spatial development as well as to the design of specific initiatives. This is because spatial development is a highly normative concept that refers to a desired spatial evolution of territories along their economic, social and environmental dimensions (CEMAT [European Conference of Ministers responsible for Spatial/Regional Planning], 2007). The idea behind spatial development is that territories inhabited by humans can be transformed qualitatively in their physicality, but also in their social and economic structures. Within academic as well as policy circles, the terms "spatial" and/or "territorial development" are often used interchangeably to describe a desired continuous and substantial transformation within a given geographical scale – this can be at the local, regional, national or international level (see also World Bank, 2009). From a developmental point of view, spatial development contains the vision that though disparities within and across countries may exist, no place should remain in poverty.

In this line of thinking, spatial development initiatives aim to capitalise on the social and economic potential of a particular area to advance its development. It is assumed – with some good reasons – that policies of proximity are easier to organise than national policies, all the more in SSA, which often has regional and sometimes ethnic clusters (Stroh, 2009). There exist several types of SDIs, which differ in their principal objectives, geographical scales as well as sectoral and industrial focus. This report covers five types of SDIs: special economic zones (SEZs), technopoles and science parks, industrial parks, clusters and economic corridors. Table 2 provides an overview of the main objectives and features of SDIs under study.

Table 2: Overview of SDI typologies and characteristics

	SEZs	Technopoles	Industrial parks	Clusters	Economic corridors
Main objectives	Promotion of FDI, trade, exports; employment promotion	Technology and science promotion; innovation and competitiveness	Industrialisation, technology transfer; economic and employment growth	Innovation, economic specialisation and dynamism; pro-poor growth	Infrastructure development; trade facilitation and economic growth across regions
Geographical scale	Locally concentrated (urban), inside a country, located in confined area	Locally concentrated, inside a country (urban), located in loose agglomerations or in confined area	Locally concentrated (urban outskirts/ semi-rural), inside a country, located in confined area	Dispersed across a location or region (urban/rural), inside a country, located in loose agglomerations	Dispersed across regions and nations; across countries, connecting loose agglomerations, hinterlands and confined production areas
Industry/ sector focus	Single sector/ industry, multi-sectoral/ -industry	Single sector/ industry, multi-sectoral/-industry	Single sector/ industry, multi-sectoral/-industry	Single industry	Single sector/ industry, multi-sectoral/-industry
Other characteristics	Critical mass of exporting firms; special regulatory and customs regime; export and trade incentives; improved and dedicated export infrastructure	Critical mass of firms with R&D facilities; spatial proximity to research organisations and universities, provision of technology-specific infrastructure	Critical mass of capital-, revenue- and technology-intensive business (often in light and heavy manufacturing); integrated in national industrial development strategies; subject to special environmental and social regulatory regime; special public support infrastructure	Critical mass of loosely co-located SMEs; joint action "collective efficiency" among clustered firms in the form of horizontal and vertical networks; may involve dedicated public and private support infrastructure	Critical mass of industries with high demand for transport and logistical services; comprehensive economic and development strategy based on the facilitation of transport and logistical infrastructure, (regional) harmonisation of institutional and regulatory frameworks

Source: Adapted from Gálvez-Nogales (2014)

The following subsections provide a short overview of their main features and characteristics. However, these initiatives are not necessarily mutually exclusive concepts – rather they may be combined with each other. For example, economic corridors encompass and link clusters, industrial parks as well as SEZs. An SEZ may hold several smaller production clusters and so on. Thus, it should be noted that the boundaries between these conceptual categories are not always clear cut, as many aspects of SDIs are interlinked.

2.2.1 Special economic zones

The main idea of promoting SEZs is the attempt of policymakers to address infrastructural deficiencies, procedural complexities, bureaucratic hassles and growth barriers raised by monetary, trade, fiscal, taxation, tariff and labour policies without introducing nation-wide structural reforms, as the latter is resource and time-consuming (Farole, 2010; Zeng, 2011). Thus, rather than overthrowing the existing socio-economic and institutional design of an economy, policymakers introduce economic enclaves, that is, SEZs, to slowly phase-in modernisation processes, industrialisation and trade liberalisation. Orthodox economics prefers nation-wide structural reforms and sees "zoning" approaches as a "second-best" solution that may lead to unfair competition, government failure and political capture (Farole & Akinci, 2011). In contrast, policymakers and approaches in economic geography see formal "zoning" as a means to more easily overcome persistent market and coordination failures and prepare socio-economic and political reforms in the rest of the country (Farole & Akinci, 2011).

Compared to all other SDIs, SEZs are the most concentrated on a geographical scale (Gálvez-Nogales, 2014). SEZs are located within a country's national boundaries and separated from other areas of economic activity by confined geographical lines. The business rules and regulatory frameworks, that is, the investment climate, within SEZs are normally more liberal from those on the "mainland", that is, the national territory outside of an SEZ, and geared towards boosting (foreign direct) investments, exports and trade (Farole & Akinci, 2011; FIAS, 2008). Accordingly, SEZs have three main characteristics:

1. SEZs have a special regulatory and customs regime, that is, SEZs have a dedicated administration for managing customs and providing access to imported inputs free of tariffs and duties. An SEZ's governance may

be centralised or decentralised according to its functions. Different laws and regulatory texts apply to SEZs compared to the "mainland".

2. SEZs normally provide a range of (fiscal) incentives to increase exports and trade, that is, the SEZs' administration offers corporate tax holidays or reductions, for example value-added taxes, local taxes, etc., as well as streamlined procedures and technical support in building trading/export capacities.

3. SEZs are characterised by better and easier access to quality infrastructure compared to that on the "mainland". This includes better access to land, plants, factories and more reliable services in energy, transport, water and telecommunications. Yet, though agglomeration economies are an essential benefit for firms, there exist SEZs as single factory units, that is, firms that are licensed as free-zone companies but that are entitled to operate anywhere in the national territory. These single-unit SEZs are, in fact, missing out on the "zone" in the special economic zone concept.

SEZs can incorporate a number of different economic sectors and industries. Traditionally, SEZs were set up for the manufacturing of goods or rendering services, or both. Most existing SEZs focus on one major industry but are multi-product-driven. The term SEZ covers a broad range of zones, such as free trade zones, export processing zones (EPZs), high-tech industrial development zones, free ports and others alike. Thus, though traditionally SEZs aim at increasing economic activities and trade, they can be functionally diverse.

Many developing countries have been promoting SEZs with the expectation that they will drive investments, industrialisation and foreign exchange earnings. Indeed, over the last decades, SEZs have been growing rapidly. In 1986, the International Labour Organization's (ILO) database reported 176 zones in 47 countries (Farole & Akinci, 2011). By 2006, it reported 3,500 zones in 130 countries (Farole & Akinci, 2011). Mostly in East Asia and Latin America in the 1970s, there was a rise either in import substitution or in export-led growth policies driving labour-intensive manufacturing with SEZs (Farole, 2010, 2011; Farole & Akinci, 2011). This process further accelerated during the 1990s and 2000s, leading to an unprecedented area of economic globalisation and the geographical fragmentation of global production systems, especially in manufacturing (Farole, 2010, 2011; Farole & Akinci, 2011). The most associated success story about an SEZ is that of Shenzhen in China. Beginning in 1980 the country has become

paved with more successful zones, underpinning dramatic export-oriented growth (Zeng, 2010, 2011). Similar processes have been observed in South Korea, Malaysia and other East Asian countries, but also in Tunisia and the Dominican Republic (Farole & Akinci, 2011; Zeng, 2010, 2011).

2.2.2 Technopoles and science parks

Empirical research shows that the innovation process often involves collective efforts of firms, research organisations and institutions and is rarely driven by a single firm (Asheim, 1996; Cooke, 1996, 2001; Etzkowitz & Leydesdorff, 2000). This insight has encouraged policymakers to set up the so-called technopoles, or science parks (Castells & Hall, 1994). A technopole – or a science park – is an organisational and geographical entity that is characterised by the concentration of emerging technology, science, or research-related businesses, knowledge-based institutions and public authorities (Sanz, 2004). Starting in the 1990s, policymakers aimed to boost regional technology transfer, innovation and, hence, economic growth and competitiveness by planning or supporting co-located high-tech firms in cities, suburbs or rural areas with the provision of land, plants or other premises and other important infrastructure services, for example energy and information and telecommunication networks (Sanz, 2004). As a result, planned technopoles involve a combination of several policy fields such as industrial, science, technology and regional policies at several levels of administration (Cooke, 2001). The involvement of national administration plays a particular role in building and integrating technopoles into a broader perspective of regional innovation systems (Castells & Hall, 1994; Etzkowitz & Leydesdorff, 2000). This role may involve the harmonisation and coordination of interdependent research efforts across national regions as well as the standardisation and patent protection of emerging technology.

Technopoles can be planned or can grow naturally out of concentrated agglomerations of firms and organisations that have a strong science and technology focus. Publicly planned technopoles and science parks constitute 55 per cent of worldwide parks and are followed by public–private partnerships (PPPs) (29 per cent) and purely private parks (16 per cent) (IASP [International Association of Science Parks and Areas of Innovation], 2015). The former two park models are often confined to an explicit geographical area, whereas private science parks appear to be more loosely organised and show less concentrated forms of co-location.

According to the statistics from the International Association of Science Parks, technopoles and science parks are an overwhelmingly urban phenomenon, as only 6 per cent are not located in or near a city (IASP, 2015). Also, more than two-thirds of science parks worldwide are located near business clusters (World Bank, 2010a). Technopoles can be focused on one or multiple industries, yet, the latter is often the case, as innovations often occur through inter-disciplinary research across industries and sectors. Indeed, only 18 per cent of science parks worldwide are specialised on a particular industry or technology (see IASP, 2015). There exist several other names for technopoles and science parks, such as high-tech centres, incubator centres, technology parks, techno-parks and science cities. However, the main characteristics and features of all these SDIs can be summarised as follows (World Bank, 2010a):

1. Technopoles consist of a critical mass of firms with research and development (R&D) facilities, which carry out research in one or more relevant areas. These firms can be either large, medium or small in size. However, it is often observed that technopoles consist of a combination of a few larger – and many smaller – high-tech firms, start-ups and spin-offs working together on one or more focused areas.

2. Technopoles incorporate or exist in spatial proximity to knowledge providers such as universities, educational institutions, research organisations or laboratories in order to link research with economic applications. Often, these knowledge providers are handled by public bodies, yet this is not necessarily the case.

Technopoles provide infrastructural and financial support services. This may involve well-equipped, subsidised work premises, reliable energy provision, full-functioning information and communication networks, safe laboratories as well as other industry-specific infrastructure requirements. Furthermore, technopoles often run different financial programmes to support the scaling-up of business ideas. This includes platforms that link businesses and technology developers with venture capital, commercial banks and regional development agencies. There exists a large variety in means and ways to provide support services. Within planned technopoles, most of the necessary infrastructure services are offered by local or national authorities and funded through public budgets. In this public-funded model, local and national administrations may offer further fiscal incentives for research activities, for example tax breaks or reductions, subsidised rents,

etc., to support R&D activities, especially those performed by younger and smaller start-ups. In other cases in which technopoles have grown more naturally, many infrastructure investments and support services are offered by private firms, often larger corporations, that wish to support their smaller technology spin-offs or act as investors for promising technology start-ups in order to absorb them later. Eventually, PPPs would be another common way to fund technopole and science park development.

Governments and corporations tend to continue to heavily invest in technopoles in the hopes of gaining economic prosperity (Sanz, 2004). Although economic restructuring, innovation and competiveness may be the major long-term goals of publicly funded technopoles, it is the commercialisation of technology and science know-how in the form of goods and services that drives private and publicly run technopoles in the short- and medium term (Cooke, 2001). The existence of many business incubators and support programmes highlights the ambition to bring new technology business and scientific advancements to the market (World Bank, 2010a). Beyond these motives, there exist other complementary goals of firms and the public to set up technopoles: (i) technopoles may be used as a dynamic environment to help relatively mature, domestic businesses to stabilise, regain or accelerate their growth by exposing them to new R&D; (ii) technopoles offer an ideal environment to obtain capital, skills, technology transfer and exposure to leading multinational corporations for both domestic firms and knowledge institutions; and (iii) technopoles and science parks may be set up to create employment for the local and regional workforce, especially for graduates with advanced degrees. This is particularly important if the latter do not otherwise find appropriate job opportunities and are forced to move to other regions or another country, leading to a loss of talent and potential brain drain.

The first famous technopole was founded in the 1960s in the rural Californian area of Silicon Valley by a number of loosely agglomerated private companies (Castells & Hall, 1994). The Silicon Valley success story inspired policymakers across the world to include technopoles into the spectrum of their technology and economic policy instruments. First, advanced economies in the 1990s such as France, Germany, Japan and South Korea experimented with technopoles. However, this trend soon became mainstream in the 2000s and adopted by LMICs such as India, in Bangalore, and Indonesia, in Bandang (Castells & Hall, 1994; Yusuf, Nabeshima, & Yamashita, 2008; World Bank, 2010a). According to the statistics of the

United Nations Educational, Scientific, and Cultural Organization, by now there are more than 400 science parks worldwide, and their number is still increasing (UNESCO [United Nations Educational, Scientific, and Cultural Organization], 2015). The United States leads the list of technopoles with more than 150 science parks, followed by Japan with 111 and China with nearly 100 science parks. China was one of the first emerging economies to set up a number of technopoles (Jongwanich, Kohpaiboon, & Yang, 2014; Sun, 2011; Yun & Lee, 2013; Zhang & Wu, 2012; Zhou, 2005). Other larger emerging economies such as India, Malaysia and Turkey followed (Fikirkoca & Saritas, 2012; Malairaja & Zawdie, 2008; Vaidyanathan, 2008). On the African continent, South Africa shows the largest number of science parks, followed by Senegal, Rwanda, Madagascar, Zimbabwe and the Ivory Coast (UNESCO, 2015).

Initially, the main objective of LMICs in setting up technopoles and science parks was to promote technology transfer and diffusion from international operating firms to domestic firms (World Bank, 2010a). Thus, although technopoles were traditionally set up to advance new technological frontiers, many LMICs focused their programmes on simple business incubators, skills-development and education programmes with technology as a central theme. However, with increasing international competition for foreign direct investment (FDI), innovation and technology programmes in LMICs have become more ambitious. By earmarking budgets, providing business support services and offering substantial incentives for national investors and FDI, national governments in LMICs have encouraged the development of hierarchically planned high-technology industry complexes and special high-tech development zones (Gálvez-Nogales, 2011; World Bank, 2010a).

2.2.3 Industrial parks

The United Nations defines industrial parks or industrial estates as tracts of land developed and subdivided into plots according to a comprehensive plan, including the provision of roads, transport and public utilities for the use of a group of industrialists (UNIDO [United Nations Industrial Development Organization], 1997). In theory, industrial parks are an instrument to develop a form of industrial organisation and advance industrialisation in a context where the nation-wide provision of industrial infrastructure is not feasible (Saleman & Jordan, 2014). Hence, the main rationale behind building industrial parks is to provide adequate infrastructure services

within a geographically demarcated and limited terrain. This is particularly important for the manufacturing sector, which is capital-, technology- and energy-intensive.

In the 1970s, national governments established the first industrial parks, which were solely operated with government subsidies and offered the most basic services and facilities, such as production halls and storage space (UNIDO, 1997). In the following decades, industrial parks were built with a stronger focus on the requirements of particular industries, and governments added a wider range of services and benefits (UNIDO, 1997). Eventually, a gradual involvement of private actors and firms in the planning and coordination of industrial parks – first in the form of private outsourcing, and later in more formal PPPs – led to improvements of these services and facilities (Saleman & Jordan, 2014).

Industrial parks can be focused on one or multiple sectors and may fulfil a number of functions. Usually, the types of facilities, services and features in a given park align with the needs and functions of particular industries and sectors. Usually, industrial parks are located in suburban, semi-urban or rural areas in order to minimise and control the environmental and social impact of industrial production (UNIDO, 1997). Accordingly, depending on the category of the industry, for example food production, light consumer good assembly or heavy metal processing, industrial parks may be governed by different regulatory regimes. The latter may include different labour and environmental safeguards and provide industrialists with incentives to further invest in the quality of production and work environment (UNIDO, 2012). Although the composition of industrial parks varies to some extent, the following characteristics can be found in nearly all industrial parks:

1. Industrial parks consist of emerging and established businesses that target specific industries, in particular light and heavy manufacturing and processing. These activities are typically capital-, revenue- and technology-intensive. Whereas industrial estates hold enterprises of every size group, industrial parks tend to be dominated by medium- and larger-sized companies.

2. Industrial parks are relatively independent economic units within a demarcated area that may be linked to national industrial development strategies and are subject to special environmental and social regulatory regimes. Generally, they tend to be run by public authorities or in PPPs. Solely privately run industrial parks are the exception.

3. Depending on the industry, industrial parks enjoy better support infrastructure and investment conditions for industrial development than the rest of the country. Due to better planning and specialisation, that is, as an eco-industrial automobile assembly park or food-processing park, etc., industrial parks exhibit a stronger complementarity in facilities, inputs and services, thereby providing great advantages. This is especially important for industrial operations that require common facilities such as solid waste treatment facilities or residential complexes for workers to be sustainably operated.

Obviously, the purpose of the park may vary, and with it its major policy goals. Beyond promoting industrial development, governments have tried to attract FDI, create more and better employment opportunities and advance technological developments through the establishment of industrial parks. In LMICs, the challenge, however, remains to continuously upgrade a park's skill base and advance specialisation in order to move beyond the mere assembly of goods and processing of raw materials (Saleman & Jordan, 2014).

According to the United Nations Industrial Development Organisation (UNIDO), in the mid-1990s there existed around 8,800 industrial estates in the United States, 1,200 in Canada, 300 in Germany and 200 in the United Kingdom (UNIDO, 1997). Emerging economies have also been catching up with the establishment of industrial parks. In Asia about 4,000 industrial estates existed in 2001, of which about 2,000 were in China alone (Yang et al., 2001). Another estimate is given by Falcke (1999), who calculates about 12,000 industrial parks worldwide in the 2000s, of which an increasing number were represented in newly industrialising economies in Latin America, Asia and sub-Saharan Africa.

2.2.4 Clusters

The theoretical foundations of clusters go back to Marshall (1890) analysing concentrated and specialised firms, mostly small-scale businesses, belonging to the same industry in a particular locality. Against the limitations of "Fordist" production systems, the 1970s witnessed a rise of the so-called Third-Italy model, in which particular regions were thriving due to the concentration of SME clusters (Porter, 1990; Pyke, Becattini, & Segenberger, 1990). The concept of cluster shares many features with those of industrial parks or estates, but whereas the latter represent a "set

of interrelated industries and interconnected companies" (Porter, 1990), clusters tend to be a less "formal" form of enterprise agglomeration. Compared to industrial parks, clusters also involve a larger number of micro-, small and medium-sized firms and tend to be embedded in a local community in which entrepreneurs and workers are sharing similar socio-economic and cultural backgrounds (Zeng, 2010). Clusters come in many shapes and have different development trajectories.

In recent decades, the concept of clusters has gained increasing importance on the agendas of international development organisations (Altenburg & Meyer-Stamer, 1999). Cluster promotion and development schemes were initiated by UNIDO, national governments and donor organisations to promote new forms of industrial organisation and to foster pro-poor growth (Albu, 1997; Schmitz & Nadvi, 1999; UNIDO, 2010). According to UNIDO (2010), a cluster refers to a sectoral and geographical concentration of enterprises and/or individual producers, that is, self-employed or one-(wo) man businesses that produce a similar range of goods or services and face similar threats and opportunities. Accordingly, clusters are focused on one industry, or on several closely linked industries (Schmitz & Nadvi, 1999). Clusters do not have exact geographical boundaries. Enterprises of a cluster may be located within cities, they may be spread out over a few towns and villages, or be located across rural and surrounding areas. However, they generally share these common features and characteristics:

1. A cluster encompasses a critical mass of enterprises, mostly SMEs and some larger companies, that are located in geographical proximity to each other and produce similar or related goods or services.

2. Through joint actions, clustered enterprises may share many benefits, such as joint bulk input or raw material purchases, joint advertising and marketing, the shared use of equipment and access to larger markets. The advantage resulting from such collective efforts is referred to as "collective efficiency" (Nadvi, 1997; Schmitz, 1997; Nadvi & Schmitz, 1994). In order to reap these benefits, clusters heavily rely on effective inter-firm networks, that is, strategic alliances of firms working together towards a common economic goal. Inter-firm networks can be horizontal and vertical. Whereas horizontal networks are built between competitors, vertical networks, particularly supplier development schemes, are agreements between firms belonging to different levels of the same value chain.

3. A cluster may be supported by a range of dedicated public and private organisations located in spatial proximity, for example business associations, training and technical assistance providers, and public financial support institutions.

Across the globe, governments see clusters as drivers of entrepreneurship, enterprise development learning and innovation. As a result, in the last decades, cluster initiatives and support schemes have become popular policy instruments that are regarded as efficient due to the high concentration of target groups and areas, and regarded as effective due to the many past positive success cases in industrialised countries and emerging economies, for example wine clusters in Chile and surgical instruments in Pakistan (Giuliani & Bell, 2005; Knorringa, 1999; Schmitz, 1997, 1998; Tewari, 1999; Zeng, 2010). Furthermore, governments in LMICs as well as international organisations have made use of the clusters approach to foster pro-poor growth, that is, the inclusion of vulnerable and marginalised groups within the process of economic growth and development.

2.2.5 Economic corridors

The concept of corridors has continually evolved and expanded in its scope and complexity during the last two to three decades. Although they were initially understood as pure transport routes, the current understanding encompasses a more holistic approach that includes regulatory and institutional frameworks and typically a focus on one or several productive industries, for example agriculture (Sequeira et al., 2014). At their core, economic corridors are defined as a "linear agglomeration of economic activities and people along the physical backbone of transport infrastructure" (Gálvez-Nogales, 2014, p. 8). Primarily, the function of transport corridors was to connect both urban and rural areas across regions and countries to promote trade, that is, movement of passengers and goods. However, in the last decade, these traditional hard infrastructure measures were complemented by policy reforms, organisational adjustments and targeted interventions to promote trade, economic growth and integration of the hinterlands (Brunner, 2013; Hartmann, 2013). As a consequence, corridors have become multi-faceted and labelled more appropriately as economic and development corridors.

The main function to serve as transport and logistics facilitator has been expanded. Nowadays, corridors are expected to serve as policy instruments to achieve sustainable economic growth (economic corridors), as integration mechanisms for economically lagging areas and as a development strategy for poverty-stricken and mostly rural areas and regions (development corridors) (Arvis, Carruthers, Smith, & Willoughby, 2011; Farole, 2012, 2013). By improving transport infrastructure and services, corridor schemes are meant to unlock and facilitate otherwise unrealised private-sector investments (Adzibgey, Kunaka, & Mitiku, 2007). This requires governments to remove bottlenecks that are preventing investments, but also to identify economic opportunities that can trigger additional upstream or downstream development. Eventually, all dimensions of corridors – trade, logistics, economic investment and development – aim at promoting spatial development through better connectivity across vast distances.

Indeed, economic corridors cover large geographical areas, urban as well as rural, within and across countries. They connect several centres of economic activity, and with it they offer developmental potential for the rural areas and hinterlands in between. The following paragraph summarises the main features and characteristics (Brunner, 2013; Gálvez-Nogales, 2014; Sequeira et al., 2014):

1. *Facilitation of transport and logistics infrastructure*: Within economic corridors, there may exist one or more of the following trade flows (Brunner, 2013; Hartmann, 2013; Sequeira et al., 2014): first, international trade flows from abroad that can pass through maritime gateways to a final inland destination, or that can be heading towards another coastal country, or that can pass through to a country's hinterlands for transit to landlocked countries; second, transnational trade flows between neighbouring countries; third, domestic trade flows between economic and commercial centres within a country. Each of these trade and logistic flows requires a (partially) different set of hard infrastructural components (Hartmann, 2013), namely seaports, roads, railways, border posts, warehouses and other facilities. Furthermore, different services are associated with regional, national and international flows. To name a few, these include transport services (roads, rail and maritime), logistical services, clearing and forwarding, customs and other border management agencies such as immigration, police and sanitary services (Hartmann, 2013).

2. *Harmonisation of institutional frameworks and procedures*: As economic corridors link geographically diverse areas, regions and countries, policymakers are required to adjust and harmonise institutional frameworks in order to provide the technological, organisational and legal opportunities for trade, economic growth and development (Gálvez-Nogales, 2014). For example, this includes the coordination of transport investments and the harmonisation of policies and regulations as well as logistical procedures and standards for clearing. The harmonisation – and in some cases legal – regulative and procedural adjustments of laws, regulations and procedures affects different levels of administrative and governmental jurisdiction (local, national, international). First, national-level corridors encompass domestic jurisdictions and make coordination and alignment between local, regional and national-level authorities, that is, between the rulings of state and federal courts, necessary. Second, transnational corridors affect the economic and trade relations with neighbouring countries. This implies governments and government bodies engage in exchanges within the areas of transport, trade and other economic policies to foster harmonisation among two or more countries. Third, supranational corridors may span across a whole region or even across continents. An area that large and diverse needs to be governed by clear and mutually respected laws and regulative practices. Bi- or multilateral trade agreements as well as mutual spatial development initiatives may be required to deepen cross-country regional integration and formalise cross-border cooperation between the involved national governments (Brunner, 2013). Although all corridor models involve multiple-level stakeholders and various governance options, the policy space for national governments is substantially compromised when engaging in transnational and supranational corridors (Marrian, 2001).

3. *Promotion of one or more industries*: In theory, economic corridors can be focused on one or multiple industries and sectors. There exist a large number of mono-sectoral corridors focusing on one major industry, such as energy and mining corridors, tourism corridors, etc., for example the Mauritanian Mining Corridor (World Bank, 2008a) or the tourism corridor in Laos (Travers, 2008). However, in many cases, corridors enable the anchoring and involvement of many different industries and sectors, especially of those industries that denote a high demand for transport and logistical services (Hartmann, 2013; Sequeira et al., 2014). These industries are typically agribusiness, mining, industrial manufacturing and tourism (Gálvez-Nogales, 2014).

4. *Stakeholder models*: Different stakeholder models exist in corridor governance; yet, the large majority of economic corridors are run by public authorities. In LMICs these public-led corridors may be supported by international organisations, donors and their technical agencies. In other cases, private-led corridors are developed through a strong involvement of the private sector in the form of PPPs. In their most "organic" form, historical economic corridors were developed as private-led trade routes by international traders and multinational companies, for example the Silk Road.

Clearly, due to its extensive programmatic scope, the economic corridor approach is the most complex SDI scheme of the geographical approaches discussed here on several levels. This complexity obviously has its downsides. The overall coordination costs are high: the harmonisation of investments, interventions, regulatory frameworks and interests across as well as within industries poses a substantial challenge to the financial, personal and time resources of a corridor's leadership – in particular, if the corridor is led by mostly understaffed regional or national public authorities (Sequeira et al., 2014).

Additionally, the policy objectives within corridor projects are manifold. Compared to other spatial development initiatives, economic corridors tend to have more complex policy goals due to their extensive geography. Although there is no standard model as to what can and needs to be achieved, there exists a strong focus on boosting private investments as well as achieving inclusive economic development and cross-country regional integration. Indeed, when making use of the corridor approach in LMICs, most policymakers wish to attract investors, to amplify economic growth of certain designated industries, to improve employment prospects and to foster the integration of lagging hinterlands.

One of the most ambitious and comprehensive economic corridors to be introduced in LMICs is the transnational Greater Mekong Subregion (GMS) programme, which consists of three major and nine sub-corridors (Gálvez-Nogales, 2014). It was introduced in 1992 and involved Cambodia, China, Myanmar, Laos PDR, Thailand and Vietnam in order to link landlocked countries and areas to attractive regional and international markets, and thereby enhance economic and cross-country regional integration (Gálvez-Nogales, 2014). Over time, the GMS programme as well as the Central Asian spin-off – the Central Asia Regional Economic Cooperation

(CAREC) programme – formulated more developmental goals, such as improvements in living standards and poverty reduction via sustainable job and revenue creation in the corridor areas (ADB, 2012). Transnational corridors also exist in Latin America, for example the Initiative for the Integration of Regional Infrastructure in South America and the Union of South American Nations, which have targeted trans-regional transport, energy and communication infrastructure development (Carciofi, 2012). Yet, these are not as comprehensive in their interventions so as to be labelled economic or developmental corridors (Gálvez-Nogales, 2014). However, at the national level, comprehensive economic corridor programmes have been slowly evolving, such as in the case of the donor-supported Poverty Reduction and Alleviation project in Peru in 1992, which aimed to support sustainable employment and revenue creation via the mobilisation of private investments and the establishment of dedicated business development centres (USAID [United States Agency for International Development], 2008). This model spurred spin-offs in Central American countries that wished to support existing national commercial networks and link these with rural areas, small towns and cities that showed high rates of poverty (USAID, 2008). Finally, in 2007 the New Partnership for Africa's Development, in collaboration with the African Development Bank, embarked on a resource- and agricultural-based strategy for infrastructure development and the promotion of economic corridors and other SDIs (Farooki, 2012). The major objectives of this initiative are to improve the physical connectivity of existing transport and trade corridors and to further transform these into economic and development corridors with the aim of achieving trans-regional trade integration, integration of the hinterlands, employment creation, agricultural growth and food security (African Union, 2007; Farooki, 2012; Gálvez-Nogales, 2014). For transforming existing transport corridors into agricultural-focused economic corridors, there currently exist two prominent examples. These are: the BAGC connecting the port of Beira, in Mozambique, with three central agricultural provinces, Manica, Sofala and Tete, of the country; and the SAGCOT, connecting the port of Dar es Salaam with southern Tanzania.

2.3 Performance and global dynamics

The well-known policy rationale for SDIs is to promote foreign and domestic investments, trade, economic growth and employment. Additionally, there exist several other and more specific policy objectives

such as the development of the local technological skill base, improvements in innovative capacities, local income growth, economic diversification and upgrading. These are all possible policy objectives by which one can assess the performance of SDIs. This report examines the performance of SDIs according to three types of outcomes (please see Figure 1):

1. Short-term outcomes: The principal objective of SDIs is to attract foreign and domestic *investment*. In the short term, this tends to be accompanied by objectives to increase trade, *exports* and the generation of foreign exchange.

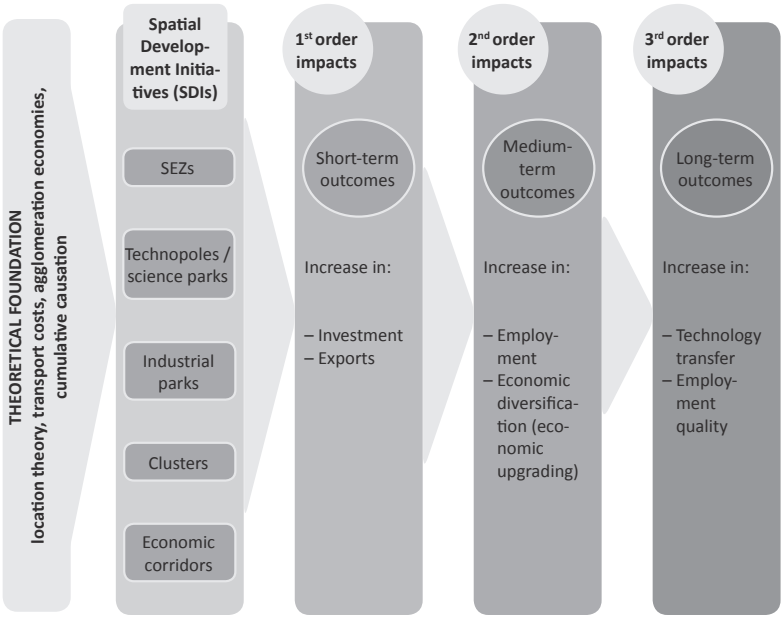
2. Medium-term outcomes: As a result of productive investments and induced economic dynamism, SDIs aim to increase *employment* and *economic upgrading (value-added)* in a particular area. This further involves the diversification of production and upgrading of local economic activities.

3. Long-term outcomes: Eventually, SDIs can contribute to *technology transfer* and knowledge spillovers that drive local innovative activities, firm-level productivity growth and long-term economic growth. These spillovers are likely to take place via local linkages of multinational or larger domestic firms with local product and labour markets. Furthermore, the upgrading of economic activities is expected to translate into higher incomes for local businesses as well as into better *employment quality*.

This developmental scenario, however, is not guaranteed. Whether a spur in investments and exports translates into more job creation, economic upgrading and improved overall living conditions is debatable and depends on a number of factors, for example the quality of investments, the degree of technology usage and automation, and the favourable integration of local economic actors. Indeed, there exists a lot of criticism with regards to the social and environmental impacts of SDIs, in particular those of traditional export zones and industrial parks. For instance, the majority of economists would not doubt the role of SEZs in promoting China's economic liberalisation and their transforming impact on the formerly agriculture-reliant economy in the Dominican Republic, yet, many also agree that SEZs are not a miraculous cure for a country's economic and social problems (Farole, 2010). For example, in China SEZs have been criticised for their lax labour laws transforming these zones into "labour camps" (Zeng, 2010, 2011).

However, social and environmental objectives cannot and should not be viewed as completely isolated from economic objectives. Evidence on SDIs, in particular on SEZs, clusters and industrial parks, suggests that economic performance and social outcomes are closely connected (Farole & Akinci, 2011; Saleman & Jordan, 2014; Sonobe et al., 2012; Zeng, 2008, 2010). SDIs that derive their competitive advantage exclusively from exploiting low-wage workers and neglecting social and environmental costs are likely to find themselves in a global "race to the bottom", and therefore unlikely to innovate, achieve economic upgrading and reap the associated benefits of higher returns on investment. In contrast, those SDIs that act as a catalyst for productivity-enhancing investments in the workers' skill base, their overall well-being and safe working environment are more likely to induce learning, innovation and economic upgrading.

Figure 1: SDIs – potential impacts



Source: Author

Clearly, the assessment of the performance of an SDI lies in the eyes of the observer and depends on which objectives, features, roles and responsibilities have previously been defined (please also see Table 2). There exist four major groups of SDI stakeholders within SDI programmes:

i. Foreign and domestic firms

Private investments from foreign or local firms is a *sine qua non* for the realisation of an SDI or economic zone. Understanding what investors want is crucial in shaping successful zones. What are their objectives and what are the criteria on which they decide whether and where to invest? Generally, firms look for locations to maximise their profitability over a particular period of time. In calculating the profitability of an investment, firms consider a number of factors, such as market size, labour costs, skill base and human resources, fiscal and other incentives within an SDI, the repatriation of profits, (foreign) exchange controls and the quality of the local investment climate. Whether a firm decides on short-term and/or long-term investments depends on the firm's strategy, trends in the particular industry, the size of product and labour markets as well as the perceived risks and opportunities in the overall business environment. Firms will assess SDIs mainly on the grounds of their own profitability and benefits that accrue to them due to agglomeration economies, for example knowledge spillovers and the availability of human resources, by being co-located with other leading-edge firms and supportive institutions, for example infrastructure provision.

ii. Developers and operators

The parties developing and operating SDIs may be private or public bodies. As a private body, an operator's main objective is to attract investors and thereby increase the profitability of the spatial initiative. In the medium- and long term, SDI operators wish to increase their revenue streams. As a consequence, in order spread their service portfolio for investors, they often promote value-addition or some sort of industry or product extension within the zone. Within the short- and long term, the objectives of investors and SDI operators are likely to overlap. However, in the medium- and long term, public operators of SDIs also wish to create more and good quality employment as well as local tax revenues.

iii. The government

The government as well as local and regional authorities rely on firms to induce local or regional economic dynamism. In the short term, public authorities wish to increase investments, generate exports (incl. foreign exchange), raise taxes and create employment for local communities as well as potentially for other groups outside of the initiative or zone. As many governments in LMICs use SDIs as instrumental policy for economic industrialisation, they are interested in how SDIs contribute to broader economic and industrial policy objectives, mainly economic diversification and upgrading. Also, there is a strong interest to warrant common goods, for example social peace and air quality, and therefore minimise negative social and environmental externalities of SDIs. The latter objectives may stand in contrast to the short-term profitability of investors. Yet, whether social and environmental considerations minimise or increase a firm's profitability largely depends on a firm's growth strategy and source of long-term competitiveness. Of course, within state organisations there exist a number of competing objectives at the various levels and segments of public administration. For example, the Ministries for Industry and Environment may have completely different agendas when it comes to assessing and regulating SDIs. Or, local authorities raising taxes on the one hand and national trade promotion agencies on the other may have conflicting interests and stakes in SDIs (for more insights into – partially – conflicting governmental interests, see Section 3). However, the formation of different interest groups within state organisations cannot be generalised at this point. Rather, the constellation of public objectives depends on a number of contextual factors.

iv. Civil society and local communities

Local communities are mostly interested in the socio-economic impact of investments. This involves the number and quality of jobs created, the environmental externalities, the impact on land and property markets and the long-term development of zones. Community participation in the design process of SDIs may be regarded as vital mechanism to ensure local benefits. From a developmental perspective, local participation is of critical importance, as several political economy factors may bias the objectives of public authorities towards narrow, short-term economic goals instead of warranting the long-term interests of local and national societies.

Table 3: SDIs – roles and responsibilities	
Government	– Conduct strategic planning – Site election and land packaging, establishing land use guidelines – Commission feasibility studies – Selection of developer and enter development agreement – Develop (offsite) physical infrastructure, e.g. roads – Regulation and administration of SDI programme(s) – Training, education and skills development
Regulator	– Legally designate public and/or private land as SDI (if SDI is spatially limited, e.g. SEZ) – Legally designate public and/or private land owners or their agents as SDI developers/operators (if SDI is spatially limited, e.g. SEZ) – Facilitate government services, incl. (business) licensing, (land use, environmental, building, employment) permits, regulatory services within the SDI, inspections, business registration, utility regulation, dispute resolution and legal counselling. Services delivery may include fees. – Monitor and enforce compliance with the SDI legal framework (if spatially bound) incl. SDI policies, standards and requirements
Developer	– Land use planning, i.e. create a land use master plan and prepare the land accordingly, incl. grading, levelling, etc. – Provision of internal infrastructure, incl. internal road networks, drainage and sewerage, and conduits and infrastructure for utilities
Operator	– Leasing and managing of facilities, incl. management of rental agreements with investors and being responsible for main services of the zone (e.g., maintenance, security) – Providing utilities onsite, incl. electricity, gas, water, telecommunications through own provision or via domestic providers – Providing value-added services, such as business and training centres, medical and childcare services, transport and recruiting – Marketing of SDIs by using their network of multinational clients across a range of industries. However, this is often a shared responsibility with the respective local authority/regulator and other parts of government, e.g. a national or local investment promotion agency
Firms	– Enter investment agreement with developer and/or operator and invest in SDIs – Comply with legal, regulatory and administrative requirements
Source: Adapted from Farole (2011, p. 171)	

With regards to these objectives, what do we know about the performance and global dynamics of SDIs?

Despite the high prevalence of SDIs and zoning schemes across LMICs, there exists insufficient quality data on their performance (Farole, 2011; Farole & Akinci, 2011; Sanz, 2004; Wessner, 2008; World Bank, 2010a). This, above all, concerns comprehensive aggregate time series data, which would allow robust assessments of various SDIs as economic policy tools beyond individual cases (Farole, 2011). Few SDIs are accompanied with elaborate monitoring and evaluation frameworks to allow for a clear assessment (Farole, 2010; Farole & Akinci, 2011; Saleman & Jordan, 2014). In particular, the data related to the technopoles, research parks and economic corridors in LMICs is characterised as "embryonic" or lacking (Gálvez-Nogales, 2014; Wessner, 2008; World Bank, 2010a). Most research on SDIs is concerned with SEZs and clusters, and even these mostly rely on single country or small-sample case studies (Aggarwal, 2005, 2006, 2007; Arce-Alpazar, Monge-Gonzalez, & Rosales-Tijinero, 2005; FIAS, 2008; Jayanthakumaran, 2003; Schrank, 2001, 2008). With regards to the geographical coverage, many studies have focused on the "usual set of suspects" in the Asian or Latin American context. Only recently, efforts have been made to address the knowledge gap on SDIs in sub-Saharan Africa (Boyenge, 2007; Farole, 2010, 2011; Farole & Akinci, 2011; Zeng, 2008, 2010). As a result, as no comprehensive and comparative assessment of even a small minority of SDIs exists, the empirical evidence to date remains quite patchy (Farole, 2011).

Nonetheless, the paragraphs that follow provide a rough overview on the performance of SDIs. The evidence presented relies on a variety of quantitative and qualitative data sources on special economic zones, industrial parks as well as various forms of zoned economic enclaves and clusters. Where data was available, information on the performance of technopoles and economic corridors was added. However, the picture is skewed towards slightly smaller spatial entities, such as zones and case studies of particular clusters, as these SDIs dominate the literature. The evidence is retrieved from experiences across LMICs as well as from some cases in the industrialised countries; yet, special attention is given to African SDIs.

Overall, the evidence suggests that for developing and emerging economies, SDIs can play a particularly large role in terms of investment and exports.

However, data suggests that their employment impact, particularly in Africa, is rather moderate. The following sections examine short-term, medium-term and long-term objectives in more detail.

2.3.1 Investments and exports

The logical first objective of SDIs is to attract investments. Without investments, there can be no further impact on employment or other structural economic factors. Across LMICs, SDIs – in particular SEZs, industrial parks and other forms of economic zones – play an important role in attracting FDI[7] (Farole & Akinci, 2011). In Mexico, economic zones, mostly maquiladora businesses along the US–Mexican border, made up 6 per cent of FDI of the country in 1994 and grew to a share of 23 per cent in total FDI in 2000 (see Sadni-Jallab & Blanco de Armas, 2002, in Farole, 2011, pp. 61ff.). A study on FDI in East Asia suggests that during the 1980s, about one quarter of total FDI in the Philippines went into SEZs (Jayanthakumaran, 2003). Data from UNCTAD suggests that this share grew to about 80 per cent by 2000 (UNCTAD [United Nations Conference on Trade and Development], 2003). A similar development can be traced in China, where, by the end of the 1990s, the share of FDI attracted to economic zones reached 80 per cent of total FDI (UNCTAD, 2003). In Africa, total levels of FDI stock tend to be much lower than those in other continents (Boyenge, 2007; Farole, 2011; Farole & Akinci, 2011). However, this might be due to the short age of many zone schemes. Farole (2011) suggests that the total level of FDI going into economic zones in Tanzania and Kenya is similar to those experienced by countries in East Asia during their initial growth phase in the 1980s. Ghana is outperforming other African countries with regards to total levels of investments in SEZs (Farole, 2011). Yet, it should be noted that much of the investment flows into single-unit free trade zones or single factory units, that is, firms that are licensed as free-zone companies and entitled to operate anywhere in the national territory. With the exception of Nigeria, all African zones contribute substantially to

7 Please note that many studies report only the cumulative value of annual investments instead of providing data on actual FDI flows. Hence, if available, most researchers rely on calculating the differences in cumulative FDI from one year to another to get an estimate of annual FDI flows. Additionally, most SDIs do not necessarily break down investment data into foreign and domestic sources; see also Farole and Akinci (2011), Farole (2011), and Jayanthakumaran (2003).

national FDI inflows, even if absolute levels are relatively low compared to economies in Asia and Latin America (Farole, 2011).

With regards to the number of firms operating in zones, African countries denote a higher number of single factory units than spatially defined zones and enclaves. Accordingly, the number of firms in African zones tends to be lower and programmes tend to be smaller-scale compared to those in Latin American and Asian economies. For example, Farole (2011) provides data on economic and industrial zone programmes, in which it is shown that the Dominican Republic supports more than 550 firms per zone, Honduras about 350 firms, Bangladesh about 300 and Vietnam about 3,500 firms. In Africa, the average zone encompasses about 35 firms only (Farole, 2011). Again a possible explanation could be the zone's age, but also the dominance of single-factory-unit licences, in particular in Ghana, Senegal, Kenya and Tanzania, compared to the "industrial park model" as an SDI policy tool.

With regards to the source of investments, successful economic zones initially denote a substantial influx of foreign investments, whereas, over time, domestic investments play a much bigger role. This traditional scenario can be found in Mauritius, South Korea, Malaysia, China, India and in Bangladesh, where local policymakers facilitated technology and knowledge transfer through international investors (Aggarwal, 2005; Farole, 2011; Jayanthakumaran, 2003). In contrast, SDIs in Africa denote a relatively high share of domestic investment from the beginning (Boyenge, 2007; Farole, 2011). Compared with the low levels of foreign investments in African zones, this hints at problems of attracting international companies to invest. Those SEZs attracting foreign investors in African zones receive inflows from a wide array of regional sources, though European investors play a marginally greater role (Boyenge, 2007; Farole, 2011). Furthermore, African zones seem to perform poorly in attracting investment in traditional exporting industries, such as garments and textiles (Farole, 2010). Instead, all the African zone programmes show economic activities in the agriprocessing, food and beverage sector, for example cocoa-processing in Ghana (Farole, 2011).

Another major objective of SDIs is to leverage local comparative advantages, increase effective demand and improve the influx of foreign exchange by exporting. For most outward-oriented SDIs, the level of exports is the most interesting performance criterion for several reasons. It provides a quite reliable indicator of the competitiveness of firms located

in SDIs. It builds a basis for local foreign-exchange revenues as well as indirect taxes for local authorities, and it constitutes an easy-to-measure target. This is particularly the case for small economies with low levels of domestic demand. Indeed, many economic zones are the main origin of exports in LMICs. According to FIAS (2008, pp. 23ff.), the share of exports originating from SEZs constitute about 77 per cent in the Dominican Republic, 79 per cent in Nicaragua, 61 per cent in Morocco, 75 per cent in Bangladesh, 78 per cent in the Philippines and 80 per cent in Madagascar. With regards to exports in African economies, the absolute and relative contribution of SDI programmes is rather limited (Farole, 2011). However, Ghana, with its cocoa-processing and other agriprocessing activities, shows some success via its single factory and enclave models, which reached about $1.12 billion and $280 million in exports in 2008 (Farole, 2011, p. 78). In contrast, programmes in Kenya, Tanzania, Nigeria and Senegal have performed poorly on absolute export levels, though some of these are at the very early stages of their development. Anecdotal evidence suggests that most African zone schemes are failing to hop on to the exponential growth path that was experienced by successful programmes in China, Costa Rica and Bangladesh in between their fifth and tenth years of operation (Farole, 2010; FIAS, 2008).

The nature and destination of exports in many Latin American and Asian countries is equally dominated by both end-product assembly and intermediates for the US, European as well as some trans-regional markets (FIAS, 2008). In contrast, African zones are strongly oriented and regulated towards global export markets, in addition they show a substantial number of exports in end-products to trans-regional markets, in particular to neighbouring countries (Farole, 2011). Other export destinations are quite dispersed, with Europe being the largest destination for only some countries, for example Ghana and Senegal (Farole, 2011).

2.3.2 Employment growth and economic upgrading

Across LMICs, SDIs have a more moderate impact on employment levels than on investments and exports (Farole, 2011). With regards to SEZs, the relative contribution of SEZs to exports in LMICs is 40 times greater than that on direct jobs (FIAS, 2008). The absolute impact on the labour market is obviously dependent on the size of the SDI scheme as well as on the size of the economy. As SDIs constitute only a small section of economic activity

in most LMICs, their absolute contribution to employment should not be surprising. However, in small countries, economic zones can be substantial employment contributors and address large-scale unemployment, for example in Tunisia, the Dominican Republic and Lesotho (Farole, 2010, 2011; Farole & Akinci, 2011).

Generally, zones in non-African countries tend to outperform African zones. In terms of their absolute and relative contribution, economic zones in Honduras and the Dominican Republic have created four times as much employment and 10-15 times on a per capita basis than Ghana and Kenya (Farole, 2011). One explanation may lie in the strong focus on resource and capital-intensive sectors in Africa compared to more labour-intensive activities in assembly and manufacturing in Asian and Latin American zones. Whereas countries such as China, Vietnam and Bangladesh have managed to move onto a path of exponential job growth over the past decade, the data on African zones suggests that their growth in employment may already be slowing (Farole, 2011; FIAS, 2008). Employment levels in African zones have been stagnating or declined rather shortly after programmes were initiated. For example, despite growing in exports by 2.5 times in Ghanaian zones since 2005, job growth was considerably weaker with only 4.5 per cent over the same period (Farole, 2011).

Beyond creating employment, a large segment of the literature on SDIs is concerned with the creation of economic value added. Value addition in economic production hints at processes of economic diversification, economic upgrading and structural transformation from agriculture to more sophisticated levels of manufacturing. So, do SDIs facilitate change and increase the long-term competitiveness in their economies? Much of the evidence on this question relies on small-sample case studies (World Bank, 2009; Zeng, 2008, 2011). Across LMICs, the evidence provides no clear picture: in some cases special economic zones, clusters and other spatial initiatives have driven the processes of economic upgrading and transition (Ge, 1999; Giuliani & Bell, 2005; Knorringa, 1999; Schmitz, 1998; Tewari, 1999; Warr, 1989; Zeng, 2010); in other cases these have led to stagnation and economic decline (Kaplinsky, 1993; Oyelaran-Oyeyinka & McCormick, 2007; Weijland, 1999; Zeng, 2008).

It should be noted that, apart from SDI programmes and industrial policies, there exist many factors as to why economies diversify and upgrade their production. Successful zones in East Asia have shown themselves to be

integrated into broader structural developments within their economies (Chang, 2003). However, data on the diversification of exports or value-added within SDIs may provide anecdotal evidence on their relative importance within this process. For example, once zoning schemes were established, Honduras, the Dominican Republic, Vietnam and Bangladesh experienced a shift in their exports towards a higher share of manufactured goods – though time frames varied from 5 to 10 years of operation (Farole, 2011).

In African zones, the structure of exports is difficult to read because of fluctuations. Only in Kenya can one find a steady increase in manufacturing activities, which occurred mainly after the establishment of economic zones (Farole, 2010, 2011). This hints at the role macro-economic trends might play in driving overall structural change rather than SDIs. Thus, a possible explanation is that African zones might have experienced bad timing and missed the opportunity to jump onto the bandwagon of economic globalisation; or, African zones, in fact, lacked the policy instrument of SDIs to facilitate that shift in the first place. Interestingly, Kenya has noticed a untypical sectoral shift in its exports: the number of exports in traditional manufacturing industries, such as garments and textiles, has declined in favour of products and services originating from the horticultural and food processing, human and veterinary pharmaceuticals, and call centre industries (Boyenge, 2007; Farole, 2011).

2.3.3 Technology transfer and employment quality

Another criterion of SDI success is that of technology- and knowledge transfer to the local economy. This can occur via (a) forward and backward linkages with domestic firms or through PPPs, or (b) through workers. With regards to inter-firm relations, this report only considers supply linkages as an indicator of potential technology- and know-how transfer. Establishing local links has been a challenge for SDIs and zoning schemes worldwide, and the overall performance across LMICs is somewhat disillusioning, with the exception of a few cases, such as Taiwan and South Korea (Chang, 2003). Historical evidence suggests that the share of locally sourced products and services by multinational companies and foreign investors increases with time and is most likely to occur in larger markets (Chang, 2003). Concretely speaking, in East Asia Jayanthakumaran (2003, pp. 61f.) finds that SEZs in smaller economies (measured in GDP per capita), such

as Malaysia, Sri Lanka and Philippines, sourced only about 4-6 per cent of inputs (mostly raw materials) locally, whereas in larger economies, such as South Korea and Indonesia, the share was up to 40 per cent. Due to the nature of economic activities in the agriprocessing sector, African zones denote a higher share in local sourcing compared to those in East Asia and Latin America (Farole, 2011). However, apart from the natural resource and agricultural sectors, African zones have struggled to expand local sourcing (Farole, 2011).

Technology and knowledge may also be dispersed via the movement of workers, in particular those who are highly skilled. For example, within economic zones, knowledge transmission is likely to happen if the share of local managers within foreign firms is relatively high. Unfortunately, African zones are heavily dominated by foreign management compared to those in Asia and Latin America. Some exceptions exist: 46 per cent of managers in Nigeria and 56 per cent in Ghana are locals (Farole, 2011, p. 95). Another group of employees, namely skilled workers who graduated from technical and vocational training schemes (TVET), can be an effective channel for knowledge dispersion. Yet, within his survey covering 10 African countries, Farole (2011) finds no clear pattern, as only a small number of workers (between 1-14 per cent annually) are being hired through TVET schemes (Farole, 2011, pp. 94f.). In view of this data, there exists a subtle concern that FDI in SDIs may create employment for external, well-educated and well-renumerated specialists, but not for many locals, who tend to get low-skill and low-paid jobs. This would exacerbate local inequalities, reproduce poverty and create stark tensions within the local social fabric. However, there is no evidence that connects this outcome to hiring practices by foreign firms, at least not for non-agricultural investments. Rather, the data might also hint at problems within labour markets in many African countries. African economies might fail to generate the skill-base and institutions necessary to facilitate labour movements across firms. These experiences are mirrored in the performance of older technopoles and science parks in high- and middle-income countries (Castells & Hall, 1994; Sanz, 2004; World Bank, 2010a). The literature on the dynamics of regional innovation has shown that the capacity to transfer technology and produce (marketable) innovations in confined economic zones and dispersed clusters is largely dependent on a region's stock of knowledge and capabilities as well as on the systematic knowledge exchange within strongly embedded, "high-trust" networks (Audretsch & Feldman, 1996; Baldwin & Martin,

2003; Baldwin et al., 2001; Cooke, 1996, 2001; Granovetter, 1985; Varga et al., 2000). These "high-trust" networks build on long-term strategic partnerships between firms that, in many successful cases, have grown over time and cannot be easily reproduced by simple co-location. In several empirical cases in LMICs, a certain absence of knowledge synergies has been observed among co-located knowledge providers and firms, hinting at the fact that spatial proximity is not sufficient to ensure real communication between firms, knowledge providers and support organisations (Brethenoux et al., 2012, 2013; Gálvez-Nogales, 2011; World Bank, 2010a, 2014a, 2014b; Yusuf et al., 2008).

Finally, the quality of employment within SDIs constitutes another important performance criterion. Across LMICs, economic zones are often criticised for their lax labour standards, social problems and employer-friendly regulations (ILO [International Labour Organization], 2003; International Conference of Free Trade Unions, 2003). Some argue that poor employment outcomes are not confined to zones but reflect wider problems in local labour markets, for example, rigid labour laws and the high number of low-skilled workers (ILO & UNCTC [United Nations Centre on Transnational Corporations], 1988). Yet, others find economic zones to offer better-quality employment than local alternatives (Aggarwal, 2005, in South Asia). In order to measure employment quality, the following section reports some data on wages as well as on employment security, that is, the length of employment contracts and unionisation rates.

Quantitative data on wages for comparable jobs outside of zones is difficult to access, which is why there is only anecdotal evidence on the relative level of remuneration (Milberg & Amengual, 2008). Qualitative data in most LMICs – with some exceptions – suggest the total remuneration of wages and benefits received by workers inside of economic zones tends to be either equal or even slightly higher than the wage for a similar job outside of the zone (Aggarwal, 2005; Farole & Akinci, 2011; Milberg & Amengual, 2008). This is further supported by the fact that most unskilled workers employed in economic zones would need to find employment within local informal sectors that, on average, provide employment opportunities with much lower wages, no benefits and higher risks (Drechsler, Jütting, & Xenogiani, 2008). Comparing wages within zones with that of national minimum wages, a similar picture emerges: wages of unskilled workers inside the zones are substantially higher than the minimum wage (Farole, 2011; Milberg & Amengual, 2008). Yet, exceptions exist in Honduras, the

Dominican Republic and Tanzania (Farole, 2011). Moreover, although zone wages in Africa denote a considerable premium compared to national minimum wages, the latter are often considered to be far lower than the living wage, for example in Kenya and Ghana (Farole, 2011). For example, in Nigeria the national minimum wage of $50 per month is considered to be below a living wage, that is, a wage that is large enough to provide for the basic necessities of life (e.g. food, shelter).

In comparing absolute wages for unskilled workers across regions and countries, Farole (2011) finds African workers receive relatively higher wages than those of workers in most Asian countries, for example Bangladesh and Vietnam, but lower wages than those of workers in Latin American countries. Yet, compared to Asian economies, the surveyed African countries denote a 20 per cent higher average cost of living (Farole, 2011). Hence, adjusting wages for purchasing power shows that unskilled workers in Africa might have more problems in receiving a living wage. This hints at the limitations of African economies to compete with Asia in labour-intensive sectors, such as garments, textiles and other assembly activities.

With regards to job security, African zones heavily rely on temporary workers. Yet, whether this is specific to SDIs cannot be clearly attributed, as African economies in general show very inflexible labour markets, which cause temporary work to be widespread inside and outside of zones (Farole, 2010; Farole & Akinci, 2011; Milberg & Amengual, 2008). Unionisation rates among zone workers in six selected African economies[8] – with the exception of Senegal – are slightly lower than the national average (Farole, 2011). One explanation might be the fact that some zones, for example in Nigeria and partly Kenya, temporarily or completely forbid strikes, lockouts and collective bargaining while simultaneously maintaining employer-friendly judicial arrangements, for example disputes are to be handled by zone operators exclusively. Other social problems such as long working hours, lack of job advancement opportunities and poor physical work environments are mentioned in the literature. However, exists little quantifiable data exists, in particular for African SDI programmes (Milberg & Amengual, 2008).

8 These are Ghana, Kenya, Lesotho, Tanzania, Senegal and Nigeria.

As a partial summary, this section has shown that the overall performance of SDIs in LMICs tends to be mixed. Although the contribution of confined SDIs in attracting investments and facilitating exports across LMICs is substantial, their role in driving employment, economic upgrading, technology transfer and employment quality is less clear. Within the African economies, most zone programmes have largely failed to perform under most criteria. With some exceptions in Mauritius, Ghana and Kenya, most economic zones in Africa show low levels of investment and exports, lacking economic and technological upgrading as well as poor employment-related outcomes. In fact, many programmes have shown signs of stagnation and decline. The reasons for this underperformance in Africa can be manifold and connected to bad timing, the young age of programmes, poor planning and management as well as constraints in the national investment climates. The following section examines several explanatory approaches that aim to understand the underlying factors of success and failure.

3 Reviewing SDIs – what factors matter and what can we learn from them?

The old industrial powers of Western Europe and North America as well as the newly industrialised economies of East Asia have sustained aggregate productivity gains by shifting their productive resources from traditional agriculture into modern sectors, that is, manufacturing and services. Today, it is widely acknowledged that this structural change driven by technological progress and industrialisation led to more productive jobs, an increase in average incomes and eventually to sustained economic growth (Duarte & Restuccia, 2010; Herrendorf, Rogerson, & Valentinyi, 2014; Ravallion, 2001; Rodrik, 2014). Also, evidence exists that governments have played a pro-active role in assisting regions and firms in overcoming major growth bottlenecks such as market failures, coordination problems and negative externalities (Lin & Monga, 2011). In this context, SDIs have traditionally been used to boost investments, advance industrialisation and manufacturing activities, and promote structural transformation across the national territory.

Today, many low- and middle-income countries, especially those in SSA, face the challenge of catching up on industrial and economic development. Africa is the least industrialised continent and characterised by large informal sectors and subsistence-oriented agriculture (Breisinger & Diao, 2008). However, some researchers have cast doubts on whether the route of "classical"

industrialisation is appropriate for sub-Saharan African economies (Rodrik, 2014). Against the background of "pre-mature de-industrialisation"[9] and digitalisation, it is questionable whether sub-Saharan African economies can mimic the manufacturing boom and strategies pursued by East Asian countries. Given the sustained manufacturing competition from Asia, rising global demand for food and the abundance of land and resources in most sub-Saharan African economies, many researchers and policymakers have argued in favour of a new agriculture- or services-led growth model that is consistent with SSA's current comparative advantages (African Union, 2007; Farooki, 2012; Gálvez-Nogales 2014; Kuhlmann et al., 2011; Rodrik, 2014; World Bank, 2009). This developmental path of agro-industrialisation is envisioned by the "Agenda 2063: The Africa We Want" strategy of the African Union (2015) and will, eventually, require much more processing and value-addition activities to bring agricultural produce to end-consumers in urban domestic or international markets.

Although African countries might not pursue the same manufacturing-led developmental trajectory of their predecessors, policymakers might learn from former experiences with the use of spatial development initiatives and other spatial zoning schemes. Indeed, there exists a strong similarity in the formulated objectives by developing economies that wish to drive investments, exports and more structural transformations while simultaneously ensuring economic inclusion, that is, employment growth, and potentially the catching up of lagging regions. However, though little has changed in terms of development objectives, the question arises whether SDIs can, in fact, be considered a successful policy strategy. As shown in Section 2.3, empirical evidence across LMICs suggests that their overall performance tends to be mixed. Within the African context, most zone programmes show low levels of investment and exports, and very moderate employment impacts. In fact, many programmes have shown signs of stagnation and decline. The fact that only a very small group of SDIs and zoning schemes – mostly in East Asia and some Latin American countries –

9 Premature de-industrialisation describes a phenomenon by which developing nations are becoming services- or agriculture-led economies without having had a proper experience of industrialisation (Rodrik, 2014). There exist concerns that without a vibrant manufacturing sector, unemployment will remain high and the economies of developing regions, such as sub-Saharan Africa, will not catch up to the more advanced countries of the world (Rodrik, 2014). However, there are some that consider premature de-industrialisation in sub-Saharan Africa to be a myth (see McMillan, 2014).

have been successful in achieving their intended goals suggests that several constraints impede their efficacy and effectiveness.

Researchers and policymakers have therefore been interested in identifying the factors that constrain and drive *economically* successful SDIs. Moreover, there exists a keen interest to understand what it takes for investors, firms, local communities and other stakeholders to make SDIs *inclusive*. The objective of this section is to explore the experiences of different typologies of SDIs – with a particular focus on sub-Saharan Africa – to understand the factors, conditions and activities that contributed to their success or failure. Therefore, the main focus of this section lies in finding answers for the following two types of questions:

- Economic performance: What are the factors driving private investments, exports and employment in SDIs, and what are potential constraints within the context of SDIs? When do SDIs facilitate economic upgrading, technology and knowledge diffusion and contribute to more structural transformation processes within the national territory?
- Social performance: Under which conditions does economic performance within SDIs lead to improvements in job quality and the integration of local stakeholders, in particular small businesses and farmers. How can negative social and environmental externalities be minimised? And, what does it take to warrant the interests of local, in particular rural, communities?

There exist several explanatory approaches as to why SDIs perform or underperform. These approaches can be derived from some of the theoretical discussions covered in Section 2.1. The main theoretical perspectives include those that highlight the role of geographical factors (Diamond & Ordunio, 1997; Krugman, 1991a, 1991b, 1993; Sachs, 2001), those that underscore the importance of the investment climate, in particular those of institutions and good[10] governance (Acemoglu

10 A controversial debate on the meaning of "good" governance exists, as it – especially institutional quality – is theorised to be associated with economic growth and development (Rodrik, 2003). However, among the major international organisations, the word "good" is often associated with: political stability and the absence of violence; participation, voice and accountability of the civil society; the upkeep of the rule of law; government effectiveness and regulatory quality; transparency as well as controls on corruption (World Bank, 1992; UNDP [United Nation Development Programme], 1997). This report follows this normative understanding.

et al., 2002, 2005; Eifert et al., 2005; Hausmann et al., 2008; Klein & Hadjimichael, 2003; Rodrik et al., 2004), and those that use a mixture of both traditions (World Bank, 2009). Accordingly, the academic literature has researched a number of factors related to the successes and failures of SDIs. Largely, there exist four central groups of factors: (1) market size, location and natural endowments; (2) hard infrastructure, that is, physical infrastructure; (3) soft infrastructure, that is, institutions, laws, regulations and policies; and (4) SDI governance. The following review of the literature and subsequent subsections will be oriented towards these four groups:

1. *Geography and natural endowments* covers those exogenous characteristics that are idiosyncratic to the location and landscape of an area, region or country, for example landlockedness, natural resources and market size.
2. *Hard infrastructure*, that is, physical infrastructure, which involves the quality of, access to and maintenance of networks of roads, rail tracks, energy grids, water pipelines, etc.
3. *Soft infrastructure* is shaped by the formal institutions, laws, regulations and policies that shape the business environment as well as other factors such as finance, labour, knowledge and technology markets.
4. *SDI governance* involves all those factors that are directly linked to informal institutions and the quality of formal institutions (e.g. the de facto implementation of the rule of law), the political economy, economic governance (within value chains and between private actors), and all micro aspects linked to the design, strategic planning, management and implementation of SDIs.

Although the geographical approach strongly relies on the strength of exogenous, locational factors to explain SDI performance, those who support the investment climate view build their explanatory approach on a number of endogenous factors. Conceptually, the investment climate is composed of the complex interaction between hard and soft infrastructure as well as the quality of governance. As a result, the investment climate refers to factors from the second, third and fourth categories. Also, according to the World Bank (2015b), public governance can have several meanings and refer to a number of dimensions:

> Governance refers broadly to the exercise of power through a country's economic, social, and political institutions in which institutions represent the organisational rules and routines, formal laws, and informal norms that together shape the incentives of public policymakers, overseers, and providers of public services. This is often referred to as "the rules of the game." Three key dimensions are (a) the process by which governments are selected, held accountable, monitored, and replaced; (b) the capacity of governments to manage resources efficiently and to formulate, implement, and enforce sound policies and regulations; and (c) respect for institutions that govern economic and social interactions. (World Bank, 2015b, p. 271)

Following this definition, governance aspects can refer to factors from the third as well as fourth category. Whereas the former covers all formally set institutions, regulations and policies that are related to the performance of SDIs, the latter focuses on public as well as private governance within SDIs, that is, the strategic planning, steering and management of SDIs by public as well as private actors.

The state of the national investment climate, that is, its risks, opportunities and transaction costs, whether perceived or experienced by private actors, affects their decision to invest, export, hire workers and engage in local partnerships. Most LMICs, especially those in Africa, rate poorly on national investment climate measures (Eifert et al., 2005; World Bank, 2015a). The diverse constraints in the investment climate for private-sector investments in many LMICs are well-researched, ranging from poor physical infrastructure, heavy bureaucracies and rigid labour markets to corruption (Hampel-Milagrosa, Loewe, & Reeg, 2015; Klein & Hadjimichael, 2003; Ramachandran, Gelb, & Shah, 2009).

This is where SDIs tend to come in. SDIs are designed to address several constraints within the national investment climate. For example, larger SDIs, for example economic corridors, usually aim to link infrastructural improvements with other activities to better use them, whereas smaller economic SDIs, for example zones, generally aim to optimise the administrative environment of businesses and provide a variety of financial extension services. By these means, SDIs aim to provide a better alternative to the often sub-optimal national investment climate. Thus, for firms operating in this context, there exist two types of investment climates: (1) the national investment climate, that is, outside SDIs, and (2) the climate within. Finally, the characteristics and practices of investors and dynamics within global value chains (GVCs) strongly determine SDI performance.

However, given the fact that many of these factors are largely beyond the control of most SDI planners, developers and operators, this report focuses on those investor characteristics and GVC dynamics that can be influenced by SDI-level or national policies.

Against these conceptual underpinnings, this study documents and analyses the quantitative and qualitative evidence on the main factors that contribute to the performance of SDIs in LMICs. The study draws on SDIs in various sectors and industries, though examples from the agricultural sector and/or the agri-food industry dominate. The geographical coverage includes LMICs across regions in Asia and Latin America. However, a strong focus is laid on experiences in sub-Saharan Africa. The information was collected and synthesised by a number of mostly qualitative and some quantitatively designed case studies, as there are only a few internationally comparable and comprehensive data sets on SDIs. This is particularly true for time-series data. The lack of the latter undermines the establishment of causal relationships within quantitative studies, which is why most of the reported assessments of SDI performance outcomes, for example investments, with several other factors, for example the investment climate, rely on qualitative analyses. Furthermore, this review only reports aggregate SDI outcomes and does not provide information on the performance of individual firms within SDIs. There are several reasons for this. One is the lack of reliable and sufficiently detailed, comparable firm-level data within SDIs. Secondly, judging the success of an SDI programme by the performance of individual firms operating within it may provide an inaccurate and biased picture of its overall performance.

Although a review of SDIs holds many benefits for designing and implementing future spatial approaches, it is nonetheless confronted with data restrictions and several conceptual caveats:

- Overall, reported findings from small-sample datasets and case studies must be handled with caution due to the limited number of observations.
- Also, synthesising experiences of SDIs might lead to an underestimation of life cycle effects within spatial initiatives and zoning schemes. SDIs pass various developmental stages within a project timeline, from design to implementation, operation and adaptation. Adopting the appropriate performance criteria largely depends on the current developmental stage of an SDI.

- Finally, analysing and comparing a heterogeneous group of SDIs and merging experiences across various size formats of SDIs has the disadvantage of de-contextualising part of the information. Readers are therefore advised to be cautious when transferring insights from SDIs with different geographical and sectoral coverage to another.

The *main message* of this section is that the quality of the national investment climate is of vital importance in determining the economic as well as social effectiveness of SDIs. Deficits in national competitiveness, institutional quality, regulatory capacity and governance appear to be of critical importance for SDI. Though the "island" approach of SDIs promises to address and remove various growth obstacles for regional economic development, evidence suggests that spatial approaches rarely deliver a considerably improved environment beyond that which is available "outside" of a targeted area. Especially in Africa, SDIs face the same growth bottlenecks – poor infrastructure, heavy bureaucracy, inefficient and corrupt customs, weak regulatory capacity – that lead to crippling economic dynamism in the rest of the country. As a result, spatial approaches are only likely to be effective if governments intervene beyond spatially confined areas and if they integrate SDIs into a broader strategy to improve the overall investment climate. This requires spatially blind institutions. In contrast, using SDIs as an isolated instrument of regional development policy is doomed to fail.

Transforming regions and making SDIs work not only require hard infrastructure investments, but also soft infrastructure measures and good governance to create conditions suitable for inclusive economic development. This is not to say that policies to address geographical disadvantages, facilitate mobility and improve infrastructure markets do not remain important for creating and managing economic agglomerations at all stages of development. However, they are not enough for dealing with the more complex challenges of advancing spatial development. Indeed, many SDIs lack integration into a wider regional development initiative that goes beyond hard infrastructure measures. The performance of SDIs is shaped by the quality of governance at various levels. In fact, most benefits that investors and local communities gain from SDIs, such as access to improved hard as well as soft infrastructure, job opportunities and improved livelihoods, are strongly dependent on how well interventions are designed, planned, implemented, operated and adjusted to changing external environments.

As a result, for SDI success, several necessary but no sufficient conditions exist. In fact, studying SDIs across LMICs, a number of factors from all four thematic groups are found to impact on their economic and social performance. There is no simple explanation. SDI outcomes are the result of a combination of influencing factors, conditions and interventions. Clearly, the combination of factors is highly context-dependent – that means that whatever is a sufficient mix of factors might have led to success in one case, but not another. Accordingly, aggregated lessons learnt should be applied and interpreted cautiously.

According to the four main intervention areas, the subsequent subsections present insights and lessons from the empirical literature on SDIs in more detail.

3.1 Geography and natural endowments

According to some authors, the geographical attributes of a location can have positive or negative implications for the economic development of an area (Bloom et al., 1998; Collier & Gunning, 1999; Diamond & Ordunio, 1997; Easterly & Levine, 2002; Mellinger et al., 2000; Sachs, 2001). For instance, landlockedness, a harsh climate and the absence of nearby sources of water make a location more cost-intensive for human settlements. As cost structures strongly influence the decision of firms and workers where to produce and consume, differences in locations create uneven economic landscapes. Over time, the dynamics of agglomeration economies and market forces further enhance the formation of nationally leading economic centres and lagging places across regions and within national territories (Krugman, 1991a, 1991b). Indeed, evidence across the globe shows that market forces on their own will reproduce existing spatial inequalities: as a country or a region grows, productivity differences between lagging and leading regions will grow stronger, as will employment levels and wage gaps (World Bank, 2009).

High economic concentration is often seen as a problem. For this reason, policymakers wish to intervene with spatial initiatives as regional development instruments. The idea is that the development of physical infrastructure and the installation of SDIs within lagging locations may attract investment, induce economic dynamism and eventually reduce economic disparities. The locational choice of SDIs thereby often follows political rather than economic logic. As a consequence, many SDIs have

been shown to fail in the past due to poor location choice (Farole, 2010, 2011; Farole & Akinci, 2011). For example, to advance the development of the remote southern areas of Lesotho, the Lesotho National Development Corporation attempted to establish industrial parks in Mafeteng and Mohales Hoek, though transport costs were substantially higher than in other areas of the country (Farole, 2011). So far, only two companies have built their bases in Mafeteng and not one in Mohales Hoek (Farole, 2011). In Nigeria, the first EPZs of Calabar and Kano were located far away from operating ports and commercial areas. As of 2011, the zones together were only attracting about 20 firms (Farole, 2011).

There are three reasons as to why geographical location matters:

First, poor geographical locations for SDIs are those that lack the *natural endowments* and *resources* to serve the needs of whole industries, firms and their workers. The existence of relevant natural endowments in a certain location or area determines whether economic production can run efficiently and productively. Depending on the product and service, this has different implications. For example, agricultural production requires a favourable climate, that is, a specific range of temperatures; a minimum amount of daily sunlight and well-distributed rainfall; access to fresh water resources; and the availability and access to land. Furthermore, modern machine- and technology-intensive agricultural production as well as any kind of manufacturing requires access to reliable working energy and electricity sources. Also, a location needs to be adequate for settlements if production processes are labour-intensive. As a result, natural endowments are critical to the development of natural-resource-based SDIs. Examples are wine in South Africa and cut flowers in Kenya (Zeng, 2008). If a location lacks these geographical preconditions, SDIs are likely not going to be set up, or will fail in attracting demand to locate and invest in them. However, even in cases where the peripheral location of investments is required due to specific factor endowments, for example in mining, the distance from economic centres poses a considerable constraint to source suppliers, skilled workers and access to R&D. The next point follows as a consequence.

Second, another aspect of poor location choice is the neglect of *transport costs* and *market size*, that is, not the size of the land area but the volume of economic activity in terms of population size, income, purchasing power, local gross domestic product and other similar characteristics of a certain location. Despite the fact that SDIs improve a location's connectivity to

other economic centres, for instance through the establishment of new and better transport routes, the size of local markets matters (Farole, 2011). Indeed, cross-country evidence suggests that, as the costs of transport fall, the *physical* geography of a location matters less; however, agglomeration economies and the processes of cumulative causation make *economic* geography matter even more (World Bank, 2009). In other words, once transport costs decrease, counterintuitively, the spatial concentration of firms and people *between* as well as *within* countries will increase. This is because economic geography assumes that the bigger the market, the better the firm's prospects for cost savings, low production costs and profitability due to the efficient sharing of facilities and services, improved access to know-how and workers, as well as access to a wider range of input markets and customers. Thus, if a region is larger in terms of population and/or purchasing power, this region attracts a more than proportional share of firms (Krugman, 1991a, 1991b).

This pattern of economic geography is reflected in the performance of SDIs. Economic zones with proximate access to large consumer markets, suppliers and workers tend to be more successful than those that are geographically isolated (Farole, 2010; Farole & Akinci, 2011; World Bank, 2009). In SSA,[11] Farole (2011) finds that local market size and wealth are positively and highly correlated with a zone's level of investments and employment, though only significant for employment. Similarly, Zeng (2008) studies 10 different clusters in SSA[12] and finds that the proximity to major markets (mainly cities) led to a cluster's successful formation and operation. Thus, if a market is not big enough, SDIs may fail to attract investments from firms, or they may fail to create beneficial agglomeration economies.

Even for SDIs focusing on agricultural and natural resource sectors, evidence also suggests that value-added activities, such as agriprocessing, still take place close to commercial centres and larger markets. For example, out of the development of three zones in Ghana, only the Tema zone close to Ghana's capital, Accra, has been used successfully (Farole, 2011). At

11 Namely Ghana, Kenya, Lesotho, Tanzania, Senegal and Nigeria.

12 These are: (1) the Suame manufacturing cluster in Ghana; (2) the Kamunkunji metalworking cluster in Kenya; (3) the lake Naivasha cut-flower cluster in Kenya; (4) the Nnewi automotive components cluster in Nigeria; (5) the Otigba computer village cluster in Nigeria; (6) handicraft and furniture clusters in Tanzania; (7) the lake Victoria fishing cluster in Uganda; (8) the textile and clothing cluster in Mauritius; (9) the wine cluster in South Africa; (10) the western Cape textile and clothing cluster in South Africa.

the same time, the relative proximity of a large or specialised market can disincentivise investors in a closely located SDI and economic zone from sourcing their inputs locally. Rather, they are likely to source most of their input requirements from larger, cheaper and more specialised locations. This has been the case in the sourcing practices of investors in Lesotho, Swaziland and Mozambique, which were sourcing most of their goods and services from South Africa.

Third, the size of markets underscores the importance of effective *market demand*, not only from large and distant export markets, but more importantly, from neighbouring regions and countries (Farole, 2011; World Bank, 2009; Zeng, 2008). Cross-country evidence suggests that falling transport costs have led to more trade between regions and countries that are close by and have similar factor endowments than with those countries farther away (World Bank, 2009). This phenomenon is explained by the new trade theory (Krugman, 1979). It uses scale economies, low transport costs and the growing demand for trade in intermediate goods as well as trade in varieties of similar goods as the main explanatory drivers. In fact, most successful clusters and naturally grown economic centres initially emerged as a result of local and regional market demand (Zeng, 2008). This is particularly true for smaller, rural businesses that, initially, may not have had the necessary scales to tap into distant export markets. Thus, though better connectivity may overcome the challenge of distance, the role of regional markets should not be underestimated. As a result, in order to drive the performance of SDIs, policymakers and SDI operators should aim to understand and integrate the economic interdependencies, functions and hierarchies between cities, towns and villages close by (Gálvez-Nogales, 2014; World Bank, 2009).

In fact, shifts in regional markets may offer opportunities for lagging areas, such as semi-rural and rural hinterlands of economic centres. Changes in cost-structures within economic agglomerations may induce some firms to spread, decentralise or completely relocate their operations within the same region. However, evidence suggests that regional out-migration of firms and workers is infrequent and comes about in the form of waves at a very low pace (World Bank, 2009). Yet, managing these waves constitutes a rare, but major opportunity for SDIs to act as a catalyst of market dynamics in favour of lagging, mostly semi-rural and rural areas.

3.2 Hard infrastructure

The lack of good quality hard infrastructure is often quoted to be a major deterrent for private investments, growth in profits and aggregate economic growth (Hallward-Driemeier, Wallsten, & Xu, 2006; Hausmann et al., 2008). Good quality infrastructure includes all-weather transport routes, reliable energy grids and irrigations systems, and affordable access to digital and telecommunication networks. These "hard" factors impact on a business's efficiency and effectiveness in fulfilling a number of production demands and standards (Hallward-Driemeier et al., 2006; Hausmann et al., 2008). Uncertainties regarding the availability, price and quality of infrastructure deter firms from making complementary investments, for instance in plants, machinery and other facilities (Aterido, Hallward-Driemeier, & Pages, 2007; Reeg, 2013). In the short term, infrastructure investments are seen as an impetus for investment growth and an increase in trade. In the medium term, hard infrastructure investments are expected to lead to increased firm competitiveness, employment creation and improved public service provision.

As many LMICs lack the funds to provide quality infrastructure across their national territory, spatial approaches are regarded as a viable instrument to improve the infrastructural setting of a selected area or location (Gálvez-Nogales, 2014). The hard infrastructure component of SDIs is widely recognised to be the most basic policy intervention within spatial approaches (Farole & Akinci, 2011; Gálvez-Nogales, 2014; Hartmann, 2013; Saleman & Jordan, 2014; Sequeira et al., 2014). Depending on the strategic outlook for an economic location, hard interventions may refer to physical investments in roads, rail tracks, ports, airports, energy systems, water systems (dams, irrigation systems, sanitary systems, etc.), internet and communication networks, physical elements, such as warehouses, market centres and other logistical infrastructure.

Against the background of integrating rural hinterlands and economically lagging areas, the emphasis of most SDIs is transport infrastructure (Hartmann, 2013; Sequeira et al., 2014). This is of special importance to the agricultural and food sector, which trades perishable produce: agricultural firms, traders and logistical service companies are primarily concerned with the cost of moving goods, the associated length of time needed for movements as well as the uncertainties and delays preventing them to meet delivery deadlines. However, in adding value to agricultural production,

the demand for reliable energy, water and telecommunication networks increases substantially. In modern agricultural production, energy needs result from the use of tractors, irrigation systems, fertilisers and pesticides. Also, reliable and sufficient access to energy and water are indispensable in the energy-intensive agricultural and food-processing industry. The high-energy consumption results from the use of inefficient energy systems, but also from the various stages of washing and cleaning, cooking, cooling, extraction, pureeing, brewing, baking, pasteurising, boiling, drying and dehydration (FAO [Food and Agriculture Organization of the United Nations], 2011a). Hence, in order to drive local economic upgrading, SDI operators within the agricultural sector will have to adopt a strong focus on transport, energy and water infrastructure.

Evidence across LMICs highlights national infrastructure as a fundamental precondition of regional competitiveness (Farole & Akinci, 2011). Good quality national infrastructure is strongly associated with a more favourable investment climate and with a higher rate of private investments (Hallward-Driemeier et al., 2006). An investor survey[13] conducted by the World Bank in mostly SSA and selected Latin American and Asian countries emphasises electric and water utilities and transport as being among the most important investment criteria (Hallward-Driemeier et al., 2006). Indeed, across the globe, Farole (2011) finds infrastructure reliability and quality to significantly impact on the success of SEZs.[14] A poor state of utility infrastructure within the zones is highly correlated with lower levels of zone investments, exports and employment (Aggarwal, 2005,

13 Original surveys were designed and conducted with foreign and domestic investors based in SEZs across Ghana, Kenya, Lesotho, Nigeria, Senegal, and Tanzania, Bangladesh and Vietnam, the Dominican Republic and Honduras. The surveys covered data on investment location decisions and the experience of establishing and operating a business inside the SEZ. The surveys were conducted by local consultants in each country through face-to-face interviews with firm managers and owners. More than 600 surveys were completed across the 10 countries. In each country, surveys were conducted in three of the largest zones in the country (although the African countries all had fewer than three zones) (Farole, 2011, p. 19).

14 Farole (2011, p. 23) defines SEZs as "demarcated geographic areas contained within a country's national boundaries where the rules of business are different from those that prevail in the national territory. These differential rules principally deal with investment conditions, international trade and customs, taxation, and the regulatory environment; whereby the zone is given a business environment that is intended to be more liberal from a policy perspective and more effective from an administrative perspective than that of the national territory."

2006; Farole 2011; Farole & Akinci, 2011). In Bangladesh, the provision of serviced industrial land infrastructure and the reliable supply of power proves to be a critical and positive contribution of the zone programmes (Aggarwal, 2005, 2006; Farole, 2011; Farole & Akinci, 2011). Similarly, in Honduras, the public provision of a high-quality port and the extension of road connections leads investors to increase zone investments and exports (Aggarwal, 2005, 2006; Farole, 2011; Farole & Akinci, 2011). However, evidence on the performance of African zones to deliver on infrastructure is mixed. Compared to their respective national environments, African zones manage to deliver better infrastructure services. For example, Farole (2011) finds firms inside the zones experience 50 per cent less production downtime due to electricity failures. However, though firms within zones seem to be better equipped than their peers outside the zones, the general state, price and quality of infrastructure in many sub-Saharan African countries are below international, Asian and Latin American standards (Farole & Akinci, 2011). Yet, heterogeneity in performance across African zones exists. Whereas Kenya and Lesotho are reported to provide quite reliable infrastructure services, Nigeria's flagship Calabar zone as well as Ghana's Tema zone had either problems with electricity or water provision (Farole, 2011). Also, the costs of infrastructure services in Africa are often reported to be too high to make spatial investments economically viable (World Bank, 2009; Teravaninthorn & Raballand, 2009).

There are various reasons as to why SDIs have failed to overcome infrastructure failure or why infrastructure investments have not yielded the expected results. With a special focus on SSA, the following paragraphs list some of the reasons why some SDIs have managed to provide good quality and affordable infrastructure while others have failed.

First, the *locational placement of infrastructure measure*s is key. Upfront infrastructure investments cannot offset geographical disadvantages. Using massive infrastructure investments within SDIs to attract firms to move their operations to peripheral or lagging regions will neither balance growth outcomes across national territories nor promote investment and employment growth within SDIs. In contrast, as shown in Section 3.1, spatially directed infrastructure interventions rarely drive spatial redistribution, but tend to encourage economic concentration. SDI infrastructure investments are therefore more likely to succeed when the location exploits geographical advantages, for instance, proximity to large markets. For example, economic zones in China were established along the south-eastern coast in Shenzhen,

Zhuhai and Shantou in order to "open" the doors to foreign investors (Zeng, 2010). In India, information technology (IT) corridors were located in proximity to strategically important consumer markets. For instance, Gurgaon, a suburban town at the border of Delhi, was selected to become a major IT anchor city some 20 years ago and has now become a hotbed for the IT service industry (World Bank, 2009). In Uganda, infrastructure investments in highways and energy supply showed the highest returns in those areas that already had a strong industrial presence and were strategically located along the economic corridor linking Kampala and Jinja (the two main economic centres) (Lall, Schröder, & Schmidt, 2008).

Evidence clearly suggests that infrastructure provision in SDIs in peripheral regions rarely attracts investors. For example, Farole (2011) finds that though hard infrastructure measures have been adopted, poorly located African as well as non-African zones have not managed to incentivise substantial private investments in lagging or peripheral regions. Accordingly, when it comes to spatially designed infrastructure measures, it appears advisable to let the market pick the place (World Bank, 2009). However, given that there is market demand, connected infrastructure measures in lagging or distant areas can help greatly to incentivise local economic development. For instance, the instalment of a bridge across the Jamuna River connecting India with the north-west Rajshahi division of Bangladesh enabled local businesses to access larger markets and encouraged rural communities, mostly farmers, to diversify into the cultivation of rice, vegetables and high-value crops (Bayes, 2007).

Second, the quality of the *nation-wide infrastructure* matters to global investors and the performance of SDIs. Evidence suggests that a better national infrastructure network is related to better performance of SDIs (Farole, 2010, 2011; Farole & Akinci, 2011; World Bank, 2009). Farole (2011) shows that the higher a country ranks in the Global Competitiveness Index or in the Doing Business index, the higher an economic zone's performance in terms of investments and employment. This hints at the fact that spatial infrastructure improvements within SDIs may not be sufficient to offset the lack of basic infrastructure provision in the national investment climate. Indeed, poor national infrastructure conditions, especially the quality of roads and ports, are a major deterrent to foreign and domestic investments in peripheral areas and locations – even though SDIs are widely believed to be "islands" of better endowment and, therefore, performance.

Also, though infrastructure provision may be relatively better within zones, it may still be below international standards. This is often the case in SSA. In countries such as Bangladesh, Vietnam and the Dominican Republic, the quality of national energy infrastructure and access to utilities (in terms of downtime) is as good as – or even better than – that within African zones (Farole, 2011). As a consequence, many African zones and SDIs may not be competitive enough on a global or trans-regional scale to attract substantial foreign investment (Kuhlmann et al., 2011; Sequeira et al., 2014). Indeed, Africa's transport costs are the highest in world, at well over twice the level of other developing regions (Kuhlmann et al., 2011). In order to improve the performance of spatial initiatives, it is important to link and integrate these into national efforts to address nation-wide infrastructure bottlenecks, and thereby gradually improve the overall national investment climate.

Third, *within* SDIs, operators often fail in ensuring *the complementarity, quality and maintenance of infrastructure*. Hard infrastructure interventions are often long-term, high-cost investments and claim substantial financial resources from the public budget (Gálvez-Nogales, 2014). The extent of the costs largely depends on the geographical scale of the SDI, that is, whether it involves geographically restricted SEZs, dispersed clusters or extensive economic corridors. Also, the intensity of the intervention has cost implications. For example, the financial and coordination costs to create new, expand existing or rehabilitate old infrastructure may vary substantially. Generally, infrastructure failure *within* SDIs can be ascribed to three types of challenges: (a) complementarity of infrastructure, (b) quality and consistency of infrastructure and consistent access, and (c) maintenance of infrastructure.

a) *Complementarity of infrastructure*: The impact of hard infrastructure investments is often maximised when different sector components, namely transport, energy, water and telecommunications, complement each other. For example, improvements in energy access and the minimisation of downtime can be offset by high transport costs, long delivery times and complicated customs procedures at ports (Gálvez-Nogales, 2014). Vice versa, infrastructure provision within confined zones cannot stop at the gates but must involve transport infrastructure to economically strategic locations, such as ports, airports or other major distribution centres. Thus, in order to make large private investments viable and ensure a good performance of firms, spatial approaches require all infrastructure components to interlock. Accordingly, the sequencing

and coordination of infrastructure investments within as well as outside of SDIs constitute a major challenge to zone operators and public authorities. Although many suffer from financial constraints, evidence also hints at the role of interagency coordination failures (Farole, 2011). For example, whereas the Ghanaian Tema zone offers good transport routes to highways, ports and airports, firms within the zone suffer from regular energy and water shortages. These shortages, however, are not a result of poor infrastructure provision per se. Mostly, the problem can be traced back to interagency quarrels between local energy and water authorities and zone operators over the increase in capacities dedicated to the nearby operating zone and businesses (Farole, 2011). In order to ensure complementarity, SDI operators as well as local and national authorities have to establish an integrated approach to infrastructure improvement, taking into account the short- and long-term needs in the development of SDIs and allocation of resources for all relevant infrastructure sectors accordingly (Gálvez-Nogales, 2014). It seems that this integrated approach is taking place in the agricultural Indonesian Corridor Initiative, which envisages multi-faceted infrastructure development increasing local connectivity, as well as serving energy, water and telecommunications needs of agro-based clusters and SEZs (Gálvez-Nogales, 2014).

b) *Quality and consistency of infrastructure*: The poor quality as well as the inconsistent supply of infrastructure services in many LMICs are still hampering productivity and the application of modern technologies in SDIs. With regards to energy supply, SDIs across LMICs suffer from low-quality electricity (low voltages) or irregular supply with long downtimes (Aggarwal, 2005; Farole, 2011; Reeg, 2013). However, in international comparison and with 26 per cent of all electricity coming from generators, Africa is the second-worst-performing region after South Asia, followed by Latin America and the Caribbean (Farole, 2011). In Nigeria, power cuts in May 2009 forced investors in the Calabar zone to run production on generators for about 87 per cent of total production time (Farole, 2011, p. 219). In Ghana, water shortages forced firms to bring in water using private water trucks. Also, high fees for broadband internet connections drive up production cost and exclude many smaller investors and firms from accessing essential infrastructure services. In addressing these infrastructure challenges, most SDI operators, for example in Bangladesh, Vietnam, Lesotho and

partly Kenya, have either installed dedicated substations in industrial areas or collaborated with national electricity providers to ensure a minimum of energy supply to zones during power shortages. Also, some countries such as Bangladesh and Vietnam have entered PPPs, in which a private company produces 100 per cent of the electricity needed in the zone and sells it at a wholesale rate to the zone operator. This type of de-monopolised infrastructure provision with private participation is lacking in all studied African cases (Farole, 2011). A major problem in providing good quality infrastructure services in African zones, however, is the fact that many firms are registered as single factory units and not located in concentrated "enclaves". The latter would allow the instalment of decentralised energy plants as well as a more efficient provision of other infrastructure services, such as water and telecommunications.

c) *Maintenance of infrastructure*: Upfront investments in SDI infrastructure are not sufficient. SDI operators need to make sure infrastructure services are adequately delivered and maintained. This requires operators to oversee infrastructural operating systems within, but also outside of, zones while being in constant contact with relevant actors, that is local energy providers, water councils, transport bodies, logistical companies as well as companies located within the zone. Examples of problems in maintaining quality infrastructure can be found across the globe. In the Nigerian Calabar zone, heavy upfront investments were made to purchase state-of-the-art equipment for electrical substations within the zones. Yet, soon after being operational, the system fell into disrepair, forcing firms to rely on costly private generators (Farole, 2011). Similar experiences have occurred in zones in Ghana, Bangladesh and Vietnam. However, in the latter cases, operators developed a strategy to address maintenance bottlenecks by outsourcing decentralised energy provision to the private sector. In general, many Asian economic corridor programmes have integrated private companies to participate in funding and maintaining infrastructure (Gálvez-Nogales, 2014). Against the background of considerably tight financial and personnel budgets, economic corridor programmes have developed different modalities to engage with the private sector – most commonly in the form of public–private partnerships. For example, infrastructure PPPs are being developed in China and Thailand as member countries of the GMS corridor; in Peru as part of the Poverty Reduction and Alleviation project; in Indonesia's Masterplan for Acceleration and Expansion of

Indonesia's Economic Development corridor project; and in the African agricultural growth corridors, namely the Beira and SAGCOT corridor programmes (Gálvez-Nogales, 2014).

Fourth, reducing infrastructure costs and providing better infrastructure services within and outside of SDIs requires an *effective regulatory infrastructure regime*. Focusing on the provision of physical infrastructure is not enough. Most infrastructure sectors in LMICs are characterised by a monopolistic or oligopolistic market structure and require regulation (World Bank, 2009). Transport and energy services are often supplied by a small number of dominating firms (Teravaninthorn & Raballand, 2009). In many countries in developing Asia and Africa, railway, airline and energy companies are completely or partially owned by large state enterprises (Teravaninthorn & Raballand, 2009). Moreover, in past decades, the international business community has witnessed consolidation tendencies within various infrastructure sectors. For instance, whereas in 1980 a fifth of the world's carriers held about 26 per cent of global port slot capacity, this percentage had increased by 1992 to 42 per cent and in 2003 to 58 per cent (Teravaninthorn & Raballand, 2009, p. 186). This concentration can lead to important inefficiencies and overpricing, hampering the competitiveness of all actors, services and products within and from a given SDI.

However, the need for regulation and effective competition policies is often neglected. As a consequence, with monopolies and oligopolies being dominant in the transport, energy, water and telecommunication sectors, infrastructure costs remain high and deter private investors from setting up operations within (and also outside of) SDIs. Indeed, the absence of effective regulation may limit competition and reduce incentives to construct new as well as maintain existing infrastructure. Empirical evidence suggests that in developing countries, infrastructure companies tend to underinvest in the telecommunications and transport sectors (Canning & Bennathan, 2007). Good examples of notorious underinvestment in road maintenance can be found in Africa, where actual expenditure has systematically fallen short of planned figures (Brushett, 2005). The World Bank (2009, p. 186) estimates $45 billion was lost in the value of highways and roads in Africa in the 1970s and 1980s due to underinvestment.

Monopolism not only encourages high markups, but also corruption. However, it is difficult to determine the economic costs of rent-seeking behaviour in the infrastructure sectors. A recent study by the World Bank

reviewed the main road corridors in sub-Saharan Africa and found substantial gaps between prices for transport services and their actual costs (World Bank, 2009, see table 6.1, p. 186). Investigating the impact of corruption in ports on firm-level trade costs, Sequeira and Djankov (2014, p. 3) find that 53 per cent of all shipments tracked in Maputo and 34 per cent of those tracked in Durban had to pay a bribe. Generally, high markups, bribes and rent-seeking behaviour can be caused by infrastructure providers, infrastructure service companies as well as other actors, for instance irregular road "checkpoints" by public or private organisations. Especially bribes for public authorities are associated with significant tariff revenue losses for the government. This suggests that corruption has direct and indirect negative impacts on firms (within and outside SDIs), on infrastructure markets as well as on regional competitiveness. Thus, although improving the physical quality of infrastructure is an indispensable part of SDIs, improvements in the regulatory regimes of infrastructure sectors are vital to realise the potential.

Fifth, transforming regions and making SDIs work not only require hard infrastructure investments, but also *social infrastructure*. The existence of hospitals, schools, recreational facilities, childcare and other social services is vital if SDIs rely on labour-intensive production or wish to economically upgrade, and therefore need to attract skilled workers. In Lesotho, educational and health measures were taken up by an alliance of zone operators, firms and local NGOs – the Apparel Lesotho Alliance to Fight AIDS – to address the needs of HIV-positive workers. Other positive examples can be found in East Asian SDIs, for example in Malaysia, Vietnam and Bangladesh, where the in-migration of large pools of labour – often young females from rural areas – was accompanied by several social infrastructure measures (Sequeira & Djankov, 2014).

3.3 Soft infrastructure

A large body of literature in political science, sociology and economics highlights the role of stable and sound institutions in addressing market failures and ensuring social inclusion, which are indispensable for sustainable economic development (Acemoglu et al., 2002; Engerman & Sokoloff, 2001). This institutional and regulatory environment can also be termed "soft" infrastructure. In contrast to hard, that is, physical infrastructure, "soft" infrastructure involves the institutional, regulatory and organisational systems required for collective action, the development of firm capabilities,

skills, social and health services as well as the preservation of social stability and the environment. Soft infrastructure can refer to the national level, that is, spatially blind institutions, regulations and organisational systems covering the entire national territory; or, it can be spatially bound, that is, institutional and regulator systems applied only in a sub-national territory, for example within an SDI.

Supportive soft infrastructure is said to improve overall economic performance as well as the economic, social and environmental sustainability of firm operations (Gálvez-Nogales, 2014). For example, in the case of the agricultural sector, economic sustainability refers not only to the application of modern farming techniques, but also to increases in productivity, the expansion of markets and the dynamic upgrading of economic activities – from the stage of cultivation and farming to the stage of agriprocessing, packaging, branding and marketing. The social and environmental sustainability of agricultural firm operations refers to the inclusion of local farming communities, the creation of on- and off-farm employment opportunities, the improvement of local livelihoods and the environmental preservation of natural habitats as well as their resources. Soft infrastructure interventions may involve a large and diverse number of measures aiming at improving regulatory regimes, organisational structures and institutional designs. They can be targeted at various sub-systems, such as the regulatory business environment; the legal framework; labour and environmental regulations; land use planning and zoning; education, technology and research systems; and other relevant fields.

SDIs operate under the principle of easing the process of doing sustainable business in a given spatial territory or under a given spatially bound criteria. This "island" approach may involve a variety of soft measures addressing, for instance, regulatory entry barriers, access to permits and licences, local technology and skills development, the promotion of local business linkages and/or the facilitation of trade, including customs cooperation. Though they may require fewer financial resources than hard infrastructure investments, soft interventions require much more attention from SDI operators and public authorities within zones, as well as from regional and national authorities outside of zones. Understandably, the kinds of soft measures and issues being addressed within SDIs depend on several factors. Among these are, for example, the geographical coverage of the initiative (the scale of the initiative), the nature and number of stakeholders involved (whether public or private actors are operating the SDI), the investor orientation of

the SDI (whether it aims at attracting FDI or domestic investments) and the industrial policy focus (if the SDI favours the development of smaller business or larger industrial complexes). These *design factors* are likely to be critical in prioritising and sequencing soft interventions. For example, more outward-oriented SDIs will require more interventions in the fields of FDI and strategic industrial policies for the successful integration in GVCs as well as improved trade facilitation and customs, whereas SDIs focusing on domestic investors might require more technology development and capacity-building elements.

Evidence suggests that soft infrastructure challenges, such as the introduction of better laws, regulations, policies, standards and organisational regimes, are associated with having a decisive impact on the overall performance of SDIs. For example, estimates on economic corridors suggest that only 25 per cent of the delays on the corridors are due to hard infrastructure, whereas 75 per cent of the delays are caused by soft infrastructure challenges and poor trade facilitation (Harmon, Simataa, & van der Merwe, 2009, p. 612). Indeed, in an investor survey[15] covering 10 countries, the business regulatory environment ranked as the third most important criterion for choosing an investment location after the cost and quality of utilities and access to efficient transport (Farole, 2011). Across these countries, foreign and domestic investors did not rank investment criteria much differently, though domestic investors ranked access to technology as being significantly more important (Farole, 2011). In terms of trans-regional variation, non-African investors ranked access to labour and the availability of a variety of high-skilled labour as being more important than did African investors, who ranked tariffs and duties for imports higher (Farole, 2011). This likely reflects the sectoral focus of non-African investors, who are engaged in the labour-intensive garment and textiles and assembly sectors, whereas African investors have a stronger stake in the natural resources and food and beverage sectors.

All of the above suggests that policy, regulation and organisational challenges weigh heavily on the potential of African SDIs to attract

15 The survey reports the investors' ranking of the relative importance of 11 criteria for selecting an investment location. These criteria were: cost and quality of utilities; access to efficient transport; business regulatory environment; tariffs and duties; the level of corporate taxes; and factors such as labour, high-skill variety technology and markets. The survey covered foreign and domestic investors in Ghana, Kenya, Lesotho, Tanzania, Senegal, Nigeria, Bangladesh, Vietnam, Honduras and the Dominican Republic.

investors. Cross-country evidence suggests that the better the national investment climate – in particular the business regulatory environment, which is rated for overall "FDI attractiveness" – the better the export and employment performance of SDIs (Farole, 2011). Similar associations can be found for the Doing Business index and a zone's investment and employment performance (Farole, 2011). However, as laid out in Section 2.3, the national investment environment in many African countries surveyed is particularly poor, both at the national level as well as at the level of SDIs. Although physical infrastructure constraints constitute significant drawbacks in many African countries, the soft infrastructure gaps appear to be even more pronounced and difficult to address. Especially the policy, regulatory and institutional systems concerning the agricultural sector in Africa show deficiencies (Badiane, Makombe, & Bahiigwa, 2014; Badiane, Odjo, & Jemaneh, 2014; Boyenge, 2007; Kuhlmann et al., 2011). For example, many cross-country regional and international business opportunities are blocked by legal internal trade barriers, complicated customs procedures and heavy bureaucracy (Gálvez-Nogales, 2014). Particular deficits also exist in land-related legal frameworks and markets (Cotula, 2011). Furthermore, as many SDIs lack a supportive institutional environment, they struggle to establish beneficial local linkages that promote technology transfer, skills development and economic upgrading.

In sum, the quality of soft infrastructure is a principal influence on the speed, efficiency and effectiveness of SDIs and long-term spatial transformations. Evidence suggests that many African SDIs do not perform as well as expected by supporters of spatial approaches. Though SDIs have the intention to provide an improved soft infrastructure, most seem to be failing. There are a number of reasons for this outcome. With regards to several soft infrastructure challenges, the following sections list some of the main explanations for their failures and successes in more detail.

3.3.1 SDI regulatory business environment

The regulatory business environment defines the relationship between state institutions and the private sector. Traditionally, many SDIs are designed to offer a better regulatory environment than what is available outside. Potential regulatory benefits within SDIs are summarised in the following four main thematic groups:

a) *Trade facilitation*: A major potential benefit for investors are several measures to facilitate trade, in particular exports. This may involve allowances to import and export free of duties and exchange, simplified customs clearance, trade preferences, but also measures to reduce the other costs related to (behind) border-crossing procedures, for example non-tariff barriers.

b) *Ease of regulatory compliance*: Another principal advantage is the streamlining of regulatory and administrative processes with state authorities. In some cases, SDI operators even attempt to coordinate and manage regulatory and administrative requirements without firms being directly engaged with the large number of agencies, authorities and ministries. This "regulation management" with one-stop shops for investors may cover a wide range of day-to-day business issues, for example obtaining licences and permits.

c) *Fiscal incentives and FDI promotion*: A final benefit for investors are fiscal incentives and other promotional measures. This involves the reduction or removal of corporate tax obligations, for instance value-added tax or other local fees. Additionally, SDIs use marketing and promotional measures to attract foreign investors.

d) *Environmental and employment regulation*: Lower wages than outside of zones, regulatory exceptions and access to a rich source of natural endowments have often been stylised as potential benefits of SDIs.

The following sections elaborate on these thematic groups in more detail.

a) Trade facilitation

Facilitating trade is a major goal of SEZs, in particular in EPZs. In Farole's (2011) survey, investors placed trade preferences (and their associated rules of origin) as well as tariffs as being the fourth most important criteria for investment decisions. Though there is some variation according to a country's administration, SEZs across the globe tend to offer a better import facilitation regime, that is, access to duty-free import materials, components and other equipment necessary in production (Farole & Akinci, 2011). However, across African SEZs, there exist no significant differences on this matter (Farole, 2011). With regards to the attractiveness of SEZs as export locations, international investors rely on preferential trade agreements of the SEZ's country with lucrative foreign markets. Compared to other world regions, African countries generally have a competitive advantage

in accessing the US market through African Growth and Opportunity Act, and the European Union through the Everything But Arms and the Economic Partnership Agreements. Trade within most Regional Economic Communities (RECs) is free of duty, with some exceptions; however, there still exist tariffs between many RECs. Still, the level of trade between African regions and countries is the lowest worldwide; this also applies to SEZs. So why is this?

First, although there has been some success in facilitating exports from African countries through preferential trade agreements and the elimination of tariffs within trans-regional communities, a range of non-tariff barriers prevail and seriously hamper the potential of SEZs to engage in international and trans-regional trade. Of course, non-tariff barriers (NTBs) to trade also apply to those businesses that are not located in SEZs. NTBs encompass a wide range of regulatory regimes, certifications and public standards that relate to a certain industry and product category, for example agricultural and food products. Unfortunately, for most firms, managing the vast amount of NTBs is overwhelming, especially as these are often ambiguous and sometimes conflict with those of host countries and become more complex as the value-added of a product increases (Gálvez-Nogales, 2014; Kuhlmann et al., 2011). These barriers exist at the international and trans-regional levels. International non-tariff barriers and their associated compliance procedures constitute a major deterrent to growth for developing-countries' agricultural producers aiming to access European or US markets (Horton & Wright, 2008). At the trans-regional level, many RECs still have failed to establish trans-regional agricultural product and food safety standards and certification systems. These issues will have to be addressed if SDIs, in particular SEZs, follow an export-oriented growth path. SDI development may give an impetus to address and harmonise regulatory NTBs within a specific product category. Successful examples can be found in many trans-regional corridors in Asia, for instance the CAREC and GMS corridors, where responsible regional authorities harmonised the handling of phyto-sanitary standards and introduced a unified traceability system for regional food products (Gálvez-Nogales, 2014, pp. 114f.). This cross-country regional harmonisation process also initiated the harmonisation of the different national systems with regards to food safety standards and pesticide regulations.

Second, though some African zones offer more efficient and effective on-site *customs clearance* than what is available outside of zones, this

benefit is offset by a lack of personnel resources as well as deficits in the customs operations and facilities at national (air)ports and border crossings. Accordingly, as many zones cater to the needs of exporting firms, many have taken up measures to improve access to efficient customs clearance and trade logistics. Farole (2011) finds reported customs clearance times within African EPZs to be 30 per cent faster than those available to exporters outside of zones. However, evidence is mixed between the studied zones. Although investors operating in zones in Nigeria, Kenya and Senegal report, on average, faster clearance times compared to what is available outside of zones, experiences in Lesotho, Ghana and Tanzania indicate that customs performance inside of zones is worse. Non-African countries outperform African zones, with clearance times within zones being on average five times faster than those of their respective national customs operations (Farole, 2011).

An effective customs service within zones appears to be critical to their success. Farole (2011) finds that actual clearance time at customs is strongly associated with the investment, export and employment performance of economic zones. This strong association can be explained by the fact that customs operations are often a source of corruption and cross-interagency conflicts (due to the tax rents involved). Across countries, several institutional arrangements have attempted to tackle this issue. In many export-oriented economies, such as Vietnam and the Dominican Republic, zone operators have established dedicated customs sub-directorates within zones that are governed by tripartite commissions composed of the zone operator, private firm associations operating in the zones and the responsible customs authority (Farole, 2010, 2011; Farole & Akinci, 2011). In other cases, for example in Honduras, it is private zone operators that shield investors from directly interacting with customs authorities by hiring dedicated zone officials to do the necessary procedures for them on site. Within this hire-an-official model, zone operators have substantial leeway over the processing times and working hours of customs officials. Also, due to the regular rotation of customs officials, attempts of corruption can be minimised or prevented, while at the same time firms can be held responsible for complying with procedures.

Only some African zones offer these kinds of on-site customs clearance services, for example Ghana. In those countries where on-site customs services exist, these do not cover zones nation-wide, as many African EPZs do not operate as enclaves, but as single factory units (Farole, 2011).

Also, many EPZs offering on-site customs services, for instance Tanzania, struggle to ensure their effectiveness due to a lack of personnel, or because customs officials at border crossings or (air)ports are unaware of these special customs arrangements. Problems with customs regimes at (air) ports and border crossings cause substantial delays and undermine the work of on-site customs clearance (Kuhlmann et al., 2011). In fact, in many African countries, time costs for border crossings are excessively high. The World Bank (2009) states that most of the slowest border crossings occur in SSA. Some trans-regional corridors, such as the Maputo Development Corridor[16] and Trans-Kalahari Corridor,[17] have installed automated customs procedures and one-stop border posts to minimise delays and enhance cross-country regional trade (Kuhlmann et al., 2011). Other trans-regional corridor initiatives are still struggling to increase performance levels. For example, the Tanzanian port of Dar es Salaam, which constitutes a central trade and logistics hub for the East African Community community and for products bound to and from Rwanda, Burundi and the Democratic Republic of Congo, still lacks one-stop customs operations (Farole, 2011). For this reason, if SDIs are to enhance trade by reducing the (time) costs at customs clearance, it will require not only interventions at the site, but interagency efforts to address the more profound deficits of national customs regimes operating at (air)ports and border crossings. The new World Trade Organization (WTO) agreement on trade facilitation could give new impetus to such endeavours. Against this background, a recommendation could be to link trade facilitation projects with corridor development based on specific services and goods for which an effective supply side already exists or emerges.

b) Ease of regulatory compliance

Third, within SDIs progress in the *processing speed and quality of bureaucratic procedures*, including registration, licensing and permits, is limited by inter-agency coordination failures and a lack of institutional authority on the parts of zone operators. SDIs generally offer organised support to investors in obtaining a diverse number of business licences, permits, clearances and authorisations that are relevant for setting up

16 The Maputo Corridor links South Africa, Swaziland, Botswana and Zimbabwe, with the Maputo port in Mozambique.

17 The Trans-Kalahari belongs to the Walvis Bay Corridor and links South Africa, Botswana, Zambia, Zimbabwe and Namibia.

a business as well as for daily business operations, for example tax registrations, energy/water access permits, employment/work permits, health and safety certificates, etc. (FIAS, 2008). In order to deliver on this promise, some operators of zones and SDIs have installed one-stop business centres that bundle requests and administer the application process in order to ensure formal regulatory compliance. Within most African SDIs, this support structure has shown itself to be only somewhat effective (Gálvez-Nogales, 2014; Farole, 2011). Empirical evidence across economic zones in 10 countries suggests that procedures for starting and setting up business within zones are generally longer compared to those outside the zones due space limitations and selection processes (Farole, 2011). With regards to waiting times for setting up a business, African SEZs are comparably faster than those in non-African countries. Tanzania reported the fastest set-up time in its SEZs, though most do not have a one-stop business centre on their premises. However, in Tanzania a one-stop shop exists for all foreign investors – the Tanzania Investment Centre. Waiting times for water and electricity and other basic services within African zones are considerable longer than those in non-African zones (Farole, 2011). Compared to the services available in their respective domestic economies, Kenya and Tanzania showed an improved performance. However, in Ghana, Nigeria and Senegal, investors within zones had to wait longer for the establishment of an electricity connection than those outside of zones.

This mixed picture within African SEZs can be explained by a number of reasons. One reason may be the fact that many African zones operate as single-unit factories and are not located in enclaves where they can access shared facilities and services. In this case, a factory is categorised legally as a zone. However, it is, in fact, not geographically located in a zone, which may or may not have a one-stop shop or offer administrative services. Furthermore, anecdotal evidence suggests that even if zone operators run a one-stop shop or offer administrative services, they often lack the personnel resources and know-how to facilitate and guide application processes. Thus, the sheer existence of one-stop business centres does not ensure effective implementation. Interestingly, Farole (2011) finds no significant relationship between the existence of one-stop business centres and performance outcomes of zones in Africa. In contrast, in Vietnam, where zones are larger and business centres better equipped, these appear to have a strong positive impact on zone performance, namely short waiting times for the approval of applications (Farole, 2011; Farole & Akinci, 2011). Also,

in many cases, zone operators lack the institutional authority to advance application processes that are dealt with by institutions outside of zones. For this reason, SDIs are inherently vulnerable to coordination failures and clashes between several government agencies and ministries outside of zones.

c) Fiscal incentives and FDI promotion

Fourth, *fiscal incentives* are not a sustainable source of long-term competitiveness, but may attract investments in the short term. In order to attract investments, most SDIs worldwide are providing additional corporate, tax or other fiscal incentives. Some offer reduced tax rates, whereas others use tax holidays. The exemption periods vary (normally between 5 to 10 years), yet, some zones also offer permanent tax-free status (Farole & Akinci, 2011). Though most African countries are not yet prohibited from subsidising their exports under the regime[18] of the WTO, this exemption is not permanent and not completely exclusive[19] (Creskoff & Walkenhorst, 2009). Yet, it needs to be said that tax exemptions do not automatically constitute export subventions. Fiscal incentives are a commonly adopted policy instrument within traditional regional policies that are meant to disperse economic activities and create employment (World Bank, 2009). In order to generate multiplier effects for a region, these government initiatives are normally targeted at larger anchor-firms or anchor-investors. This "first generation approach to territorial development" has, for the most part, not led to sustained growth and competitiveness of lagging regions (Carvalho, Lall, & Timmins, 2006; Donoso-Clark & Leninhan, 2008). Rather, it has imposed huge costs on local and national taxpayers. Still, an investor survey confirms that fiscal incentives may play a role for investment decisions, particularly at the early stages of zone development, and that reduced tax

18 The WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement) rules out many of the incentives typically offered in zones, for example, direct subsidies, rent subsidies, tax holidays or reductions in any form of direct tax. However, the Special and Differential Treatment exempts least-developed WTO members and countries (whose per capita gross national product is under $1,000, in 1990 dollars) from the prohibition on export subsidies. Middle-income countries were also exempt until 2015 (see Creskoff & Walkenhorst, 2009).

19 An exempt country can still be found in contravention if the complainant can prove that the subsidy was harmful to its exporters. Furthermore, exemptions from the exemption can be found under Article 27 of the SCM Agreement (see Farole, 2011).

rates are more strongly correlated with higher levels of investments than tax exemptions and holidays (Farole, 2011).

Yet, evidence on the impact of fiscal incentives on investments and long-term performance goals of zones across countries is mixed. Whereas Harding and Javorcik (2007) and Harrison, Du and Jefferson (2010) find that fiscal incentives attract initial investments in some cases, for example China, Farole (2011) shows that fiscal incentives are not associated with improved zone outcomes. In fact, in many cases, Farole (2011) finds fiscal incentives to be negatively correlated with the export and employment performance of zones over the long term. Furthermore, the introduction of fiscal incentives poses the danger of serving exclusive privileges to certain industry-specific, local or international businesses that will oppose any phasing-out or reform in the zone or national tax systems (Khan, 2000; Soludo, Ogbu, & Chang, 2004; Whitfield, Therkildsen, Buur, & Kj'r, 2015). In fact, there is evidence that investors can become too reliant on exemptions and put enormous pressure on zone operators and regulatory bodies for extensions and alternative tax reductions (Farole & Akinci, 2011; Farole & Moberg, 2014). The threats to the phasing-out of incentives are normally to close down or to reopen the firm under a new name. This has led many regulators to adopt short-term rather than long-term solutions to the phasing-out of fiscal incentives, that is, they create alternative forms of fiscal support instead of investing in hard or soft infrastructure improvements to make a zone more competitive and attractive for future investors.

This evidence suggests that many economic zones are too dependent on these fiscal instruments and fail to invest in more sustainable sources of competitiveness, for example most African zones. The failure to move into more sustainable sources of competitive advantage and away from "race-to-the-bottom" competition is, however, not an African problem, but it can be found across the globe, for example in Honduras, the Dominican Republic and Bangladesh (Farole, 2010, 2011). Thus, as other zone promotion instruments have shown, fiscal incentives cannot compensate for the deficits in the wider regulatory business environment and the overall investment climate over the long run, for instance the lack of infrastructure and human capital. Similar observations can be made for more extensive SDIs.

Instead of extending fiscal incentives, many successful SDI programmes, especially in East Asia, have started to improve zone services, shifted the scope and targeting of fiscal incentives, and integrated spatially bound

tax regimes into that of the national economy. For example, in China and Vietnam the withdrawal of tax incentives within economic zones was announced early on to investors and gradually phased-out to prevent the appearance of policy reversals by the government and SDI operators (Farole, 2011; Zeng, 2010). In Vietnam, however, many incentives were shifted towards specific industries and/or lagging regions (Farole, 2011). In Mauritius, tax levels within zones were extended to the whole national economy (Farole, 2011). Thus, rather than competing over incentives, zones began to compete over service quality. With regards to more extensive SDIs, the regional integration and harmonisation of incentive frameworks might help to circumvent the dynamics of race-to-the-bottom competition for FDI. One example could be the European Union, which defines rules and practices on the use of fiscal incentives for FDI.

Fifth, many smaller SDIs lack the resources and know-how to be effective in *investment promotion* and fail to develop a *quality marketing strategy*. A stronger institutional link between smaller SDIs and national investment promotional agencies (IPAs) is therefore vital. Most SDIs are responsible for the promotion and marketing of their programmes to domestic as well as international investors (Harding & Javorcik, 2007). The targeting of anchor investors for SDIs or any local investments has proven to be one of the most effective promotional strategies across LMICs, for example in China (Zeng, 2010). Yet, empirical observations suggest that these promotion strategies often fail to communicate realistic project time frames as well as attract quality investors, that is, competitive and long-term investors that regularly meet financial obligations, for example rent payments, and other regulatory obligations (Farole, 2011; Farole & Akinci, 2010; Harding & Javorcik, 2007). Many economic zones and SDIs are under pressure to start marketing even before spatial programmes have been approved, or built. This is connected to tight budgets and the need to generate revenues shortly after spatial programmes have been approved. Evidence suggests, however, that timelines for spatial initiatives to kick-start firm operations are up to five years, or even more in the case of large infrastructure-related programmes, such as corridors (Farole, 2011; Gálvez-Nogales, 2014).

For example, a Tanzanian zone was communicated to be ready by the end of 2008; however, in 2010 the spatial initiative still was not operational (Farole, 2011). A related mistake is that of overselling to investors but failing to provide the services and quality that were marketed. For example, in Nigeria, the marketing of export promotion zones was linked to the

development of a deep-water port in Calabar, the provision of a number of incentives and the removal of several local market restrictions (Farole, 2011). However, due to national policy reversals, a lack of resources as well as coordination failures, none of these promises were fulfilled (Farole, 2011). Low standards of delivery can have a fatal signalling effect to investors and deter others from any further investments.

Against this background, many SDIs struggle with "empty zones" as they fail to attract investors that follow up on their investments. Thus, though zone and SDI operators can be highly effective in issuing licences, only a small number of investments are actually taking place. For example, according to the Nigeria Export Processing Zones Authority (NEPZA), only 3 out of 25 firms that have received licences for operating in a zone have actually invested (Farole, 2011). This implies that quantity considerations of zone operators are likely to play a more important role than strict quality controls during the zone application process. Again, this is related to financial pressures and incentives to reach a minimum operational scale within an SDI. Also, many smaller SDIs might simply lack the know-how on how to target potentially suitable investors (UNCTAD, 2001).

An important reason for inherent weaknesses in the development and execution of the marketing and promotional strategy of zones and SDIs lies in the lack of coordinated action between SDI operators and the national IPA. The exact roles and responsibilities between SDI operators and IPAs may vary according to the country context, but they do not tend to be clearly articulated (UNCTAD, 2001). In some cases IPAs' responsibilities are comprehensive and encompass relation management with foreign investors, the mediation between firms and public authorities (e.g. ministries, agencies, etc.) and direct negotiations with zone or SDI operators (UNCTAD, 2001). In other cases, IPAs just function as a middleman and national information centre to investors ("information kiosk" model). In these cases, promotional work of spatial initiatives may be initially accompanied by national IPAs.

However, SDIs are generally left alone with developing a marketing strategy and taking care of the subsequent stages of investor aftercare (Farole, 2011). Rather, in most cases, an IPA's role is limited to refer investors to the promotional and marketing boards of SDI operators (Farole, 2011). In the latter model, there exists very little coordinated action between IPAs and zone operators. As a result, the marketing planning as well as its execution often appears to be somewhat disconnected, duplicated and ambiguous.

These problems can be exemplified in several promotional attempts of SDIs in Asia and Africa (UNCTAD, 2001). For example, in Tanzania, Nigeria, Bangladesh and Kenya, there is no coordination between local and national promotional efforts (Farole, 2011). Thus, as many SDIs do not have the necessary scale, resources and access to information, a complete separation between the national and local levels tends to have adverse effects on the quality of the promotional/marketing strategy and execution. A positive example can be found in Ghana, where a multi-stakeholder board consisting of zone operators, the national IPA and other main stakeholders (e.g. infrastructure agencies and customs authorities) jointly coordinate and implement marketing efforts (Farole, 2011). Another institutional option is the introduction of a coordinating sector-specific agency within a responsible ministry, for example the Ministry of Agriculture, as this would involve nationally executing authorities, ensure national integration of regional and local marketing efforts as well as the provision of sector-specific know-how (Gálvez-Nogales, 2014).

d) Environmental and employment regulation

Sixth, a lack of effective *employment and environmental regulations and standards* opens the door to negative environmental and employment-related externalities and reduces the long-term competitiveness and sustainability of SDIs. Traditionally, for many LMICs, competitiveness was defined by low labour costs and fiscal incentives. Both factors may initially attract investments, yet evidence suggests that without incremental improvements in productivity and the business environment, many zones will fail to move into more dynamic economic activities (Farole & Akinci, 2011). In fact, restricting competitiveness to low wages and labour rights exceptions creates pressures on governments to extend these rights and sets in motion a "race-to-the-bottom". Indeed, Farole (2011) finds higher wages in zones to be correlated with higher growth and higher investment levels.

Generally, evidence on the labour outcomes of zones in LMICs suggests that – with some exceptions – wages and benefits received by workers inside of economic zones are either equal or even slightly higher than wages obtained for a similar job outside of the zone (Aggarwal, 2005, 2007; Milberg & Amengual, 2008). Besides, wages of unskilled workers inside the zones tend to be substantially higher than the respective national minimum wage (Milberg & Amengual, 2008). Yet, many zones, especially those in labour-intensive manufacturing, are still characterised by a widespread use of

temporary work, weak labour rights and social problems (ILO, 2003). In more detail, the ILO and other labour rights organisations criticise SDIs for not applying national labour laws, regulations and standards; of not respecting the freedom of association and the right to strike; of lacking job security, health and safety standards; of not disbursing overtime pay; as well as of practicing abusive working hours (ILO, 2003).

Furthermore, SDIs, in particular industrial parks, also have a bad reputation with regards to environmental performance. Many fail to meet national standards on pollution and contribute to resource depletion. For example, in Uganda's fishing cluster, observations of resource depletion have been made (Zeng, 2008). These negative externalities have had disastrous consequences on local communities and their livelihood strategies (Zeng, 2008).

Accordingly, zone and SDI programmes will need to strengthen their approaches to social and environmental compliance in order to ensure that the social and environmental basis for this growth is maintained. They can do this by putting up clear standards and setting in place effective M&E programmes. In fact, to stay competitive in the long term, evidence suggests that SDIs should avoid a traditional growth strategy that solely builds on low wages and the unyielding exploitation of natural resources (Farole, 2011). However, clear regulatory responsibilities lie in the hands of national policymakers. National policy should ensure a solid legal and regulatory framework to protect workers and the environment within and outside of zones and SDIs. Recently, ecologically sustainable models of SDIs, such as eco-industrial parks, have been on the rise, yet little data is accessible for evaluation. Environmental management within economic corridors has also been addressed in most blueprints of upcoming SDI projects (Gálvez-Nogales, 2014). For example, the SAGCOT corridor aims at promoting sustainable agricultural practices, avoiding deforestation and ensuring efficient water management. Their implementation has yet to be seen.

3.3.2 Legal foundations and responsibilities

SDIs cover delimited portions of the national territory and are therefore covered by national legal frameworks. Yet, SDIs may also be legally bounded spaces, where a set of rules and procedures are different from those operating in the rest of the national territory, for example in the case of more liberal rules on investment and trade in SEZs. Accordingly, SDIs

may involve a particular legal and regulatory regime that contains one or several dedicated laws or measures written in a number of legal documents concerning land use, on-site building requirements, infrastructure provision, compliance with environmental and labour standards, etc. Starting from the design phase, these laws and legal texts determine which types of SDI investments and developments are allowed and selected in a particular area, and how access to these areas is restricted via licences and permits (Farole & Akinci, 2011). These legal foundations of SDIs should clearly formulate the specific roles, duties and legal obligations of ministries and agencies in order to offer transparent public partner structures for private developers, zone operators and investors. In particular, when many private and public actors are involved, a solid legal foundation for SDIs is required to manage the deliverables of all actors involved. In fact, for investors, local businesses and affected local communities, the legal framework guiding the processes and dealings of business contracts, land use, conflict resolution and settlement is of central importance.

Accordingly, the quality of the legal framework is expected to have a strong impact on the performance and long-term competitiveness of SDIs. Evidence across sub-Saharan Africa as well as in other LMICs supports that notion and suggests that the legal underpinnings of SDIs can still be improved (Farole, 2011).

First, SDI performance often suffers from *overlapping and ambiguous legal frameworks*. SDIs have their own regulatory regimes, yet they are subject to national legal frameworks and require third-party controls to ensure alignment with national laws. The latter is especially important if zone development and zone operation are in private hands. For example, a clear licensing regime should guide private developers in their application process on the locational criteria of physical developments, the approved type of economic activity, the required financial reserves or turnover and other necessary norms and standards. However, empirical cases suggest that national legal responsibilities of dedicated national or local authorities often overlap and/or collide, especially if spatial programmes were initiated through different government ministries that have produced disconnected and inconsistent laws and regulations (Farole, 2011; Farole & Akinci, 2011). The result may be the existence of several disconnected legal and regulatory frameworks and legal acts that create considerable confusion over the duties, roles and responsibilities of zone owners, developers, operators and regulators. In fact, in Tanzania the Ministry of Trade and

Industry and the Ministry of Planning, Economy, and Empowerment separately launched two programmes – one for EPZs and one for SEZs – creating significant confusion among developers, operators and investors as to the legal foundations (Farole, 2011). Moreover, since both programmes lacked proper legal operationalisation for the regulation and management of the programmes, many EPZ and SEZ developers and operators were left alone in defining their legal obligations and became vulnerable to institutional clashes. There were similar experiences in Nigeria with two conflicting regulatory bodies, namely the NEPZA and the Oil and Gas Free Zones Authority. Thus, instead of issuing several SDI acts, governments should ensure that all legal frameworks are integrated into one national legal document that is concerned with the development of SDIs.

Ambiguous legal frameworks and not clearly separated responsibilities not only create confusion and inter-agency conflicts, but encourage the misuse of power. In many SDIs in LMICs, the zone owner, developer, operators and regulator are one and the same public body (Aggarwal, 2005; Farole, 2011; Gálvez-Nogales, 2014). Thus, in this rather common situation, SDIs are left to regulate themselves and assume roles under one roof that partially conflict. In the African context, examples can be found in Lesotho, Tanzania, Nigeria and Kenya (Farole, 2011). SDIs in this actor constellation have been shown to provide land and facilities below market price (Farole, 2011). Furthermore, with upcoming private competition in zone development and operation, publicly-run zones have come under pressure. As a result, some all-in-one zone developers, operators and regulators have been found to misuse their regulatory functions to get rid of potential competition. For instance, anecdotal evidence suggests that the all-in-one zone authority in Bangladesh has delayed the issuance of an environmental permit to a private developer for a time frame of more than eight years (Farole, 2011). For this reason, it is important to ensure institutional checks and balances, the existence of an independent regulatory agency for all (types of) SDIs as well as proper representation of private and public parties in SDI boards.

Second, not only is the existence of *de jure transparent legal frameworks* important for the long-term success of zones and SDIs, but also their *de facto implementation.* Problems in the implementation of legal acts is a common failure among many SDIs, particularly in Africa (Farole, 2010; Farole & Akinci, 2011). A lack of de facto implementation and proper legal enforcement might be due to the fact that laws and regulations are unclear, not applicable or antiquated. Whereas the first is due to a bad design, the

latter two are the result of inflexible laws that cannot adapt to changing environments. For example, setting up fixed rules about the design of SDIs can backfire if laws do not leave enough scope for changes in the nature of activities within an SDI, the markets to which spatial initiatives have access to and the types of firms being allowed to operate in them.

Thus, setting rules is a balancing act between providing clear benchmarks and flexibility for economic developments. This is particularly relevant for SDIs that grow beyond national legislation into transnational regional corridors. Also, ambiguity might be used by the powerful to extend patrimonial and nepotistic advantages (Acemoglu & Robinson, 2001; De Janvry, Gonzalez-Navarro, & Sadoulet, 2014; Montgomery, 1984; Warriner, 1969). Finally, another likely reason is the lack of personnel resources and know-how to ensure legal compliance. Most municipal jurisdictions that are responsible for spatial programmes are underfunded and often lack the manpower as well as the means to enforce legal obligations.

3.3.3 Land markets and institutions

The development of SDIs ultimately depends on the availability of land and secure access to land rights or land tenure. Evidence suggests that the absence of formal titles may deter private investments (Deininger, 2003; North, 1971). However, the "pro market" model of land rights is controversially discussed (Von Braun & Meinzen-Dick, 2009; World Bank, 2010b). Against the threat of the illegal or unfair appropriation of land and natural resources by large capitalist land acquirers without prior, informed consent from local communities, that is, "land-grabbing", by global investors, many fear the exploitation of indigenous and local agrarian communities that rely on customary land laws and tenure systems (Borras & Franco, 2012a, 2012b; Deininger, 2011; World Bank, 2010b).

Yet, the central questions that arise are whether large-scale rural investments, for example through agricultural SDIs and agriprocessing zones, will result in a type of agricultural and food production that benefits the food security and livelihoods of local communities, whether agricultural production is solely meant to head towards export markets and whether there is a way of combining both targets of exports and local food security (De Schutter, 2011).

A recent report by Nolte, Chamberlain and Giger (2016) on the acquisition of large-scale farmland in LMICs finds that these kinds of investments rarely lead to substantial employment growth and are characterised by very limited consultations with affected communities. Indeed, there is some evidence that large-scale investments and spatial development initiatives face problems related to the acquisition of land, resettlement and compensation practices (Farole, 2011). Similar concerns were raised by local African communities on the arrival of Chinese investors, as many of these land deals were made in secrecy without public consultation and participation (Borras & Franco, 2012a, 2012b; De Schutter, 2011). But there is also research showing that some of these reports were exaggerated (Bräutigam & Tang, 2010). However, China's own past experience with SDIs showcases this potentially "dark" side. Indeed, though economic spatial developments brought in capital and advanced technologies, they also caused the loss of agricultural land and the massive displacement of the rural poor (Gopalakrishnan, 2007).

At the same time, empirical cases show that multinational agro-investments and their associated changes in land use are not necessarily "bad" for local communities, for instance in Tanzania (Herrmann, 2017), Malawi (Herrmann & Grote, 2015), Brazil (Fernandes, Clifford, & Gonçalves, 2010), Indonesia (McCarthy, 2010), Mozambique (Borras, McMichael, & Scoones, 2010) and India (Ariza-Montobbio, Lele, Kallis, & Martinez-Alier, 2010). In fact, many case studies highlight the heterogeneous effects of land deals on different social groups and classes, for instance, rich and poor small-scale farmers, landless rural labourers, local elites and officials, landlords, and so on (Herrmann, 2017; Brüntrup et al., 2016). Unfortunately, there is only limited data on the longer-term impacts of the most recent wave of large-scale land acquisitions in Africa. Eventually, it must be said that large-scale land acquisitions made by the state to develop infrastructure may also hold potential for conflict when setting up SDIs. However, as long as the state provides adequate compensation and makes investments that are in the interest of the public and local communities, land expropriation is legitimate.

Whether different social groups are adversely affected by SDIs depends on multiple factors that go beyond the existence of formal land titles and the quality of the deal-making process. Yet, land administration, land regulation as well as land planning have been shown to play a major role in shaping economically sustainable and inclusive investments in SDIs.

First, *poor land planning and management* can lead to severe land market distortions and deter investments in SDIs. Against the background of regional development, many governments in LMICs distort land markets by earmarking land for potential SDIs. In fact, the last decades have witnessed a "zone fever" among several East Asian countries, and more recently also African countries. For example, under the 1987 Land Administration Law in China, the central government gave way to the decentralised allocation of land that spurred the large-scale transfer of land from local land administrations to developers, which led to a rapid multiplication of zones as a result of the continued promotion of SEZs as a regional economic development instrument (Huang & Yang, 1996). In 1993 the number of zones ranged between 6,000 and 9,000, covering a total area of 15,000 square kilometres; however, many of the zones stayed empty (Cartier, 2001; Huang & Yang, 1996). A few years later, the central government had to close more than 1,000 zones (Huang & Yang, 1996). Another example of zone fever in Tanzania recently led to the demarcation of 2,000 hectares of land for 14 sites of township-sized economic development zones (Farole, 2011). This land planning and management practice for SDIs is highly problematic. Governments and municipalities may be creating an oversupply of "zones", they are likely to crowd out the private sector as the developer and operator, and they cause potential land compensation claims that may not even be necessary, given there is no actual development in the near future – unless the land was already identified as a strategic location for infrastructure development by the public sector. Also, given the lessons learnt with regards to the locational choice of economic agglomerations, it is not advisable to let bureaucrats – rather than the private sector – pick the location for regional development initiatives (see also Sections 3.1 and 3.2).

In order to make a zone attractive to investors, local municipalities and the central government have to assume large infrastructure investments to connect and develop the area. Against this background, it is highly questionable whether each and every municipality that has demarcated a zone has the financial and human resources to fund this obligation. The danger exists that this type of land planning results in many standalone and empty economic developments that create costs but no benefits for local communities. In order to make the best use of land, its zoning should follow a clear assessment of the capacity needed to implement the SDI. Failure to do so can lead to overcapacities and underuse of SDIs, overburdened local governments, weak regulatory capacity, negative externalities, such

as natural resource depletion and social exclusion, and political capture by powerful local elites.

Second, the *lack of proper land rights* makes SDI investments a costly and risky endeavour for both investors and local communities. Strengthening land institutions improves the transparency of land markets and thereby increases the chances of SDIs becoming successful with regards to economic performance and social inclusion. Land institutions encompass a number of elements such a strong land property or tenure rights, a comprehensive land registry (incl. also customary rights), mechanisms for contract enforcement and conflict resolution. A useful instrument in this context is the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT), set up by the FAO in 2012.

Unfortunately, particularly in many African economies, formal land institutions are still weak. Traditionally, land and land rights in Africa were, and partially still are, governed by customary rules and institutions (Vermeulen & Cotula, 2010a; Deininger, 2003). Yet, socio-economic changes have eroded these traditional systems. During colonial times, some areas adopted private property land rights systems whereas others introduced land rights for (white) settlers. After independence, most African countries nationalised all land, with some fully or only partly recognising customary land rights and institutions. Over the last 20 years, many African states have reformed their land policies and laws aimed at restructuring and clarifying land relations. Unfortunately, many of these land reform processes are still incomplete, that is, much of the adopted legislation may require additional laws or implementing regulations to become fully operational (Vermeulen & Cotula, 2010a). For example, though much of Africa is characterised as land-abundant, most lands are already being titled in accordance with traditional systems (Vermeulen & Cotula, 2010a). In fact, the World Bank estimates that only a small part, roughly between 2 and 10 per cent, of land in Africa is formally titled (Deininger, 2003). Most African land is owned by the state, and even if it is (partially) allowed in some countries, for example in Kenya, Mali, Madagascar, Cameroon, Burkina Faso, Sudan and South Africa, private land ownership is not widespread (Cotula, 2011). Land is often used or claimed by local communities, that is, farmers, gatherers, etc., based on customary land titles and rights.

The gap between formal and informal institutions in Africa – that is, the weak legal binding nature of formal property or informal customary land rights and land transaction procedures – creates a large grey area in which the government practically holds the only legitimate and enforceable claim to land. This creates risks and vulnerabilities for both investors and communal land rights holders.

For investors, the high prevalence of state and communal ownership and rights over land, unclear tenure laws and weak property rights make securing land in most African economies a highly complex and politically sensitive issue (Farole, 2011). In Africa, government leases with diverse durations ranging from 10 to 50 years are the main sources of land acquisitions for private investors (Cotula, Vermeulen, Mathieu, & Toulmin, 2011). If these leases, given by state institutions, are not credible, private actors are likely to withhold productive investments. Indeed, the risk of claims being raised during – and long after – a purchase arises if local communities and customary land rights holders feel violated in their titles (Farole, 2011). Apart from the financial implications of land compensation, these conflicts make investors vulnerable to reputational risks once local contestations have intensified and lead to accusations of "land grabbing" (Cotula, Vermeulen, Leonard, & Keeley, 2010). Investors may also face arbitrary policy reversals, by which state institutions reclaim land leases. Strengthening the land rights or land tenure of investors to unleash productive, long-term investments will require more transparent and legally binding national as well as international arrangements, for example international investment treaties, national legislation investment codes and the reform of sectoral laws (Cotula, 2011). However, in the long run, political risks can only be reduced if governments and local communities perceive the investment as being beneficial (Brüntrup, 2014).

For local communities and customary land rights holders, weak institutions and non-transparent land transactions can lead to dispossessions if governments sell out or lease out land earmarked for SDIs or zone developments. In those African countries where land is nationalised, most rural communities hold "use rights", which are acknowledged but not necessarily protected within national law (Vermeulen & Cotula, 2010a). Often, customary land rights holders perceive the customary tenure systems as being legitimate, which is why few are actually seeking formal titles. Apart from that, formalisation is expensive and bureaucratic. Though many countries have improved the legal standing of customary tenure rights, for example under Mozambique's

Land Act 1997 or Tanzania's Land and Village Act 1999, the actual legal protection is often linked to conditions of "productive use" (Vermeulen & Cotula, 2010a). Given the unclear legal definition of "productive use" in traditional agriculture, which often requires multi-year fallows to restore soil fertility as well as widespread pastoralism and even a few hunter and gatherer societies, and the widespread differences in the conception of decision-makers about what is productive "enough", the legal protection of customary rights is actually full of loopholes (Cotula et al., 2010). Yet, in the case of public interest or security, most governments across the globe can rely on legal foundations to expropriate land owners in exchange for compensation. State compensations are often paid according to the loss of land improvements, for instance buildings and crops, but not for the loss of land rights or long-term income streams (Vermeulen & Cotula, 2010a). This approach is often regarded as inadequate by land rights holders, yet the lack of monetised land markets makes pricing land a challenge in most state-dominated land markets in LMICs.

Accordingly, a greater recognition and legal integration of land rights, combined with the legal capability to exert these rights, is required, not only to increase productive and long-term investments in SDIs, but also to minimise the vulnerability of local communities to the expropriation of land.

Third, although legal empowerment through formal land titles is a necessary condition for generating better and more equitable returns from SDIs, their impact is intrinsically linked to the *quality of laws and institutions* and the *political economy in land transactions*. Apart from installing laws and institutions, it is crucial to ensure their correct implementation in order to shape inclusive and sustainable SDIs. With respect to the development of SDIs, the quality of land laws and institutions is defined by the degree to which these impact on the proper legal implementation of land transaction procedures and the fulfilment of commitments by all stakeholders. This is particularly true for large-scale, private land deals. In most African countries, these formal procedures may involve a number of institutions, multiple contracts and legal instruments (Vermeulen & Cotula, 2010a). Even though attempts have been made to streamline the process, from the perspective of the investor, land transaction processes in most African economies are still perceived as being lengthy, uncertain, costly and highly complex (World Bank, 2015a). A major national requirement for land deals is the Environmental and Social Impact Assessment (ESIA), which needs

to be carried out before land can be transferred. This also involves a formal approval process with local and affected communities. Consultations and partial consent are required for land transfers and have been incorporated into national laws in Tanzania, Mozambique and Ghana (Vermeulen & Cotula, 2010a, 2010b). For example, in Mozambique, this consultation process is part of Land Act articles 13(3) and 24(1c) and is meant to ensure that the land area is "free" and "has no occupants" (Cotula, 2011). However, the requirement of complete prior consent has not been integrated into any African national legal framework (Cotula, 2011).

Although the ESIA and the consultation and compensation mechanisms constitute important procedural safeguards for local landholders, their implementation appears to be sub-optimal. For example, the approval criteria for the ESIA are often vague, and the studies are often not accessible to the public (Vermeulen & Cotula, 2010a). Furthermore, several authors emphasise that even in Tanzania and Mozambique, where national legislation is most protective of local interests, consultation procedures are only partially implemented (Salomão & Nhantumbo, 2009; Sulle & Nelson, 2009). For example, the information flow to local communities prior to meetings tends to be poor, the meetings do not happen regularly but are one-time events, and there are neither minutes, results templates nor investor agreements on benefit-sharing, compensations or guaranteed access recorded during meetings. Also, there are no – or limited – instruments to identify and reflect varying preferences and opinions among communities. Many community consultations are limited to the opinions of village elders, officials and elites, who also tend to dominate consultation meetings if these involve socially marginalised groups, for example women, landless labourers, younger community members, etc. In this context, it would be advisable to extend the necessary transaction procedures by recognising the VGGT.

The existence of non-transparent, partly elusive legal practices in land transactions – and the observation that many land deals are being negotiated behind "closed doors" – supports the notion that the installed safeguards are ineffective in addressing the underlying political dynamics of land relations (Borras & Franco, 2012a, 2012b; Deininger, 2011; De Schutter, 2011; Vermeulen & Cotula, 2010a). The current legal framework on land and its implementation lack transparency and effective checks and balances, which discourage corruption and elite capture of benefits. However, the legal empowerment of local communities (as well as investors) will only be

effective if existing institutional mechanisms do not reinforce underlying power structures but instead open up real opportunities for dialogue and change. Recently, some attempts have been made to address this issue. For example, within the SAGCOT, policy dialogue has been focused on improving land use and tenure agreements through the promotion of equitable land-lease systems administered by regional land banks (Gálvez-Nogales, 2014). Also, the BAGC has put forward reforms in land policy that aim to make land deals more agreeable among investors, local governments and communities (Gálvez-Nogales, 2014).

3.3.4 Policy regimes facilitating local linkages and spillovers

A main policy rationale for the launch of SDIs is the establishment of local linkages between investors – often FDI – and domestic firms and workers. These linkages are supposed to induce spillovers and drive structural changes in the local economy, that is, technology transfer, economic upgrading and economic diversification. Furthermore, by providing commercial opportunities – not only for global or larger national investors, but also for a wide range of smaller, domestic market participants – spatial economic initiatives are becoming more inclusive. In the case of the agricultural sector, the idea is that the combination of global investors with their financial, technological and management resources – together with domestic stakeholders and their regional know-how and networks – will catalyse the growth and inclusion of many small and medium-sized agribusinesses and farmers, and thereby drive the overall upgrading of local agricultural value chains, employment growth and improvements in livelihoods.

Indeed, in most developing countries, foreign investors offer the most valuable potential source of knowledge and technology to build local capabilities in manufacturing (Farole & Winkler, 2014). With regards to agricultural production, the combination of international technology and marketing know-how on the one hand, and local cultivation and farming techniques on the other, may increase agricultural output, exports and food security. In Africa the promise of connecting more than 600 million small agricultural producers to larger and more profitable markets is leading many policymakers to support FDI under the development of SDIs, in particular agrocorridors, agro-clusters and agriprocessing zones (Kuhlmann et al., 2011). At present, most African agricultural producers engage in smallholder farming and are not effectively integrated into local, regional and global

agricultural and food value chains. As they face substantial entry barriers, they miss out on learning opportunities in the commercial sector, increased productivity, market access and upward social mobility.

However, at the same time, the question remains as to whether the modern, newly emerging supply chains are in competition with traditional supply chains, which often employ a number of rather land-poorer farmers, oftentimes women. For these, alternative and more inclusive channels of market access and integration have to be found, for example via domestic agri-food firms as well as famer cooperatives that may act as a facilitator to overcome entry barriers.

Either way, establishing local supply linkages between foreign firms and the local economy has been a challenge for most LMICs in the past (Chang, 2003). Evidence from a cross-country survey commissioned by the World Bank indicates low levels of purchases of goods and services from local suppliers in developing countries, in particular in African countries and the apparel sector (Farole & Winkler, 2014). Similar results are found in the context of SDIs, of which a majority operates as EPZs in manufacturing- and assembly-based activities (Farole, 2011).

Many examples in East Asia also showcase that it takes several decades of operation as well as pro-active policy measures to facilitate the industrial upgrading of domestic businesses (Farole, 2011; Lall & Narula, 2004; Sturgeon & Lester, 2004). However, the situation is slightly different for agriculture and natural-resource-oriented SDIs, as local supply relationships are crucial (Farole & Winkler, 2014). The agribusiness sector is inherently more dependent on local goods and services to be efficient. As a consequence, spillovers in agribusiness supply chains are likely to occur more often and faster.

Currently, the existing African SDIs, mostly in non-agricultural sectors, show limited local linkages, not to mention spillovers, with local suppliers. Most of these are lacking economic and technological upgrading and are associated with poor employment-related outcomes (see Section 2.3). Thus, though SDIs can, via FDI, facilitate structural change and provide developmental opportunities to local businesses, local linkages and spillovers are not an automatic result.

Box 2: Some insights on FDI characteristics, local linkages and spillovers

Evidence suggests that a number of FDI characteristics impact on the potential to create local linkages and spillovers. Based on a cross-country study covering 25,000 domestic and 3,400 foreign manufacturing firms in 11 sectors and 78 LMICs, Farole and Winkler (2014) find a number of interesting observations. First, local market-seeking foreign investors have greater linkages and more positive spillover effects than either resource- or efficiency-seeking FDI. Second, short-term investors are less likely to invest in integrating with the local economy than investors that are planning to operate in the host country indefinitely. Third, regional investors are the best locally integrated. For example, investors from sub-Saharan Africa have built much deeper linkages to domestic markets in African host countries than their counterparts from other regions. Fourth, more profitable investors tend to engage in activities to support spillovers. For example, in sectors where profit margins are tight, for example apparel, firms have fewer resources to invest in capacity-building. Fifth, investors signing formal, long-term contracts are more likely to provide assistance to suppliers and are therefore more likely to produce spillovers. For example, in the agricultural sector, more than 25 per cent of firms on formal contracts received assistance, compared to only 16 per cent on informal arrangements. However, for most of Africa, short-term contracts seem to dominate. Sixth, compared to foreign and domestic firms, joint venture arrangements, in which foreign firms have control, have the most positive impact on spillovers.

Source: Farole and Winkler (2014)

There are several factors that determine whether local linkages develop. On the one hand, there are explanations that relate to the nature and characteristics of FDI, that is, the willingness and capacity of foreign-owned firms to support spillovers, and the dynamics of GVCs (see also Box 2). On the other hand, institutional explanations highlight business environment factors in the host country. Indeed, evidence suggests that foreign investments tend to drive local linkages and spillovers wherever the institutional settings and conditions are most optimal for the productivity and absorptive capacity of local firms and workers (Farole & Winker, 2014). That means that countries that have been successful in generating mid- and long-term benefits from SDIs have created the conditions for constant exchange between the activities within spatial economic programmes and those in the national economy. This involves, for example, the elimination of legal restrictions and regulatory barriers on forward and backward linkages in SDIs, the availability of a wide range of goods and services, the

access to (skilled) labour and technology, the support of industry-specific and cross-sectoral public-private institutions, and the access to financial markets. Thus, SDIs and the national government may have a role to play as a provider of information, as a facilitator and as a regulator.

In creating favourable conditions for local linkages, the literature identifies a number of SDI-specific, but also broader soft-infrastructure factors:

a) *Legal restrictions, regulatory barriers and incentives in SDIs*: This involves legal or regulatory restrictions on forward linkages within SDIs, that is, local market sales, zone regulatory barriers for domestic firms, for example misaligned FDI incentives, as well as the role of local content rules;

b) *SDI and national spillover policy:* This section encompasses broader institutional arrangements and SDI programmes to facilitate linkages and spillovers, technical and financial assistance, educational and training measures as well as policy considerations in integrating SDI spillover.

However, policymakers should be aware of the difficulty in achieving local economy linkages and spillovers from SDIs and FDI. They must understand that many factors, largely outside of their control, will determine from the outset whether local market participants can be successfully integrated. Based on these insights, the following paragraphs analyse several explanations as to why the majority of past SDIs, mainly in manufacturing, in Africa have failed, and why only a few have succeeded in creating local spillovers.

a) Legal restrictions and regulatory barriers in SDIs

First, *legal restrictions on forward linkages* limit the spillover potential of traditional SDI models, that is, EPZs. Due to their enclave nature and export focus, many traditional processing zones have put in place tight legal restrictions on local market sales. In African economies, only zones in Nigeria, Lesotho and Senegal have lifted local market sale restrictions (Farole, 2011). Also, Bangladesh and Vietnam, countries with a long tradition of SDIs, have restrictions on local market sales (Farole, 2011). Additionally, many countries have put up additional administrative barriers to selling locally. These local market restrictions are particularly problematic in respect to trans-regional trade agreements. For instance, within the Economic Community of West Africa States, all products produced within free zones are excluded from free trade arrangements, which considerably

hampers the development of inter-firm linkages across the region and cuts off potential trans-regional spillovers. Also, by setting local market restrictions, many SDIs fail to attract market-seeking investors, which have been shown to generate substantial spillovers for local economies (Farole & Winkler, 2014). Thus, it goes without saying that in order to increase cross-country regional integration and the potential for spillovers through forward linkages, most legal restrictions on local market sales need to be lifted.

Second, *regulatory entry barriers* on domestic businesses and *duty-drawbacks* limit backward linkages. In many economic zones, substantial entry barriers for domestic firms exist. For example, in Tanzania, substantial financial liabilities and investment requirements were necessary to obtain a zone licence (Farole, 2011). These minimum criteria discouraged many qualified firms to apply and promoted a strategy by which domestic firms tried to supply zone-based firms from the outside. However, evidence on enterprise clusters suggests that co-location is crucial, not only for the creation of spillovers, but also for the access to finance though buyers, for example factoring (Zeng, 2008, 2010). In fact, in markets where the supply base is large but not necessarily closely located to zone-based operations, for example in Vietnam, Bangladesh and Nigeria, linkages with dynamic and large companies are weak (Farole, 2011). Supplying from the outside of zones has several other strategic and administrative disadvantages. This is because the zone administrative procedures as well as FDI incentives within SDIs do not encourage sales between firms inside and outside of zones. The most common issue is that of duty-drawbacks for zone-based firms. These enable direct – and sometimes indirect – exporters outside of zones to access duty-free imports.

Evidence suggests that, due to efficiency, most firms, especially in the natural resource and agricultural sectors, would prefer to source locally; however, the existence of duty-drawbacks creates biases against local purchases (Farole & Winkler, 2014). For example, in Honduras, zone-based firms had to pay an additional 12 per cent of value added tax for local purchases (Farole, 2011). Even if firms try to address this bottleneck and qualify as indirect exporters, they tend to face delays and heavy bureaucracy in the application process, for instance in Bangladesh (Farole, 2011). The number of hurdles and disincentives for local suppliers is particularly bewildering when FDI and zone regimes have simultaneously set in place local content rules (please see below). In order to enhance local linkages, the regulatory FDI as well as zone regime would need to be revised in favour of domestic firms.

Third, rather than force foreign investors into *local content rules*, governments should focus their efforts on improving their policies on promoting *spillovers*. As the likelihood of local spillovers is strongly associated with the willingness and capacity of foreign-owned firms to engage in local linkages, many governments fall back on local content rules (please see Box 2 on FDI characteristics). Local content rules are requirements that compel foreign investors to source a minimum threshold of goods and services from local markets. However, within the WTO Agreement on Trade-Related Investment Measures (more commonly known as the TRIMs Agreement), local content rules are prohibited. Despite this prohibition, a few countries use "soft" power to impose local content rules. Some rely on implicit local content rules as an entry requirement for FDI.

Evidence suggests that even the discussions over the possibility of local content send a clear message to foreign investors that they should make the effort to source locally or will otherwise face bureaucratic hurdles in their local investments (Warner, 2011). There are also some hard regulatory targets and measures that can be adopted to specify local content, but generally these can only be effective if the local supply base is competitive enough. For example, to support local procurement by the mining sector in Ghana, the government (in consultation with private firms) introduced the Ghana Minerals and Mining Act (2006), requiring mining companies to submit a five-year local procurement plan, for approval by the Minerals Commission, which should include targets and strategies for increasing local procurement (including development of capacity of suppliers) (Farole & Winkler, 2014, p. 137). This regulation also specified a "local procurement list" of inputs that should be purchased locally. However, if strict local content requirements are set in place without having a competitive local supplier base, local content rules are going to deter investments and would be counterproductive in fostering linkages and facilitating spillovers (Farole & Winkler, 2014). As a result, governments need to reconsider incentive regimes within SDIs and align those with their developmental priorities. Rather than force investors to source locally, governments may make use of other forms of linkage promotion.

b) SDI and national spillover policy

First, formal *institutional arrangements* and *designated linkage programmes* are critical to facilitate linkages *within* zone-based firms and those on the *outside*. In order to be effective and sustainable, they need to include *relevant*

stakeholders, *be integrated* with regional or national linkage programmes, offer *dialogue and conflict resolution, be targeted* on promising sectors and firms, access a *sustainable source of funding* and be subject to *monitoring and evaluation.* In many LMICs, especially in SSA, severe information gaps exist with regards to investor needs (e.g. requirements in terms of quality, delivery expectations, skill requirements (e.g. certifications) and the capacity of local suppliers (e.g. scale of production) (Farole & Winkler, 2014). Though the situation is slightly better within SDIs, anecdotal evidence suggests that SDI or zone operators and investment promotion agencies often fail to collaborate effectively when exchanging comprehensive information (Farole, 2011). The situation is aggravated by the fact that, in many countries, information systems such as business registries and enterprise databases are lacking or not of good quality, as most farmers and businesses are small in size and often informal in nature. In fact, the latter reason is one of the main reasons why most investors and larger, formal firms are discouraged from directly engaging with local suppliers (Vermeulen & Cotula, 2010b). Moreover, anecdotal evidence on FDI and local linkages suggests that language and culture have an influence on the choices of suppliers and managers as well as on how foreign firms integrate into local markets (Farole & Winkler, 2012, 2014).

As a result, in order to bridge information gaps and reduce transaction costs, SDI- or zone-located foreign firms will require middlemen who speaks their "language". On national as well as regional scales, such designated linkage efforts can be delivered by government institutions, sector bodies, specialised private-service providers, NGOs or by multi-stakeholder partnerships. Linkage programmes through *multi-stakeholder partnerships*, especially those including the private sector, have proven to be the most effective so far (Farole, 2011; Farole & Winkler, 2012, 2014; Gálvez-Nogales, 2014). For instance, the Vietnam-Japan Initiative holds an annual exhibition in which Japanese buyers from the electronics and automotive sectors are matched with Vietnamese zone-based suppliers (Farole, 2011). On the African continent, the Kenya incubator programme, located at the Athi River, has attempted to facilitate linkage opportunities for SMEs that were interested in connecting with Kenya's EPZs (Farole, 2011). As a result, Kenya's Export Processing Zones Authority (EPZA) was partnering up with the Kenya Industrial Estates Ltd. and the Kenya Export Promotion Council to launch the EPZ Business Incubator programme. The programme helped "incubated" firms to establish direct exporting and subcontracting linkages

with larger zone-based and external exporting firms. Also, in Mozambique, a nation-wide partnership between the governments of Great Britain and Mozambique, Rio Tinto and AgDevCo[20] successfully promotes supplier development and local linkages in mining.

The situation in the agricultural sector in SSA is a bit challenging due to the large number of smallholders. Though investors might know best with which types of local farmers they may want to do business, they may not be ready or capable of organising, training and securing the supply of a larger group of smaller suppliers. In this context, there are a number of different institutional arrangements, for example out-grower schemes, in which public and private actors jointly address crucial integration bottlenecks, such as missing economies of scale, transactions costs and compliance to standards (e.g. foods safety, quality, traceability) (Vorley, 2008). In this context public organisations, or the dedicated middlemen, play a key role in strengthening farmers' cooperatives to contain the risk of side-selling. Side-selling refers to a situation where a producer or cooperative does not comply with a contract and chooses to sell their produce to someone else, often local traders. This practice can endanger the fulfilment of contracts and therefore erodes the reputation of farmers and cooperatives as reliable partners for partnerships with the (international) private sector. Generally, these kinds of linkage programmes are organised as a special purpose vehicle under a broader PPP. A prominent example of such a PPP in an SDI in the agricultural sector is the Southern Agricultural Growth Corridor of Tanzania Centre, which links large foreign and domestic firms with small-scale farmers. Another example is Prorustica,[21] which is a PPP focusing on agricultural development in Africa, and is also active in the promotion of food markets and inter-firm linkages in the wider regional framework of SAGCOT. Also, in order to strengthen cross-border inter-firm linkages within the GMS corridor programme, many member states have focused on the development of cross-border SEZs and agro-clusters (Ishida, 2009, 2012). However, many of these trans-regional spatial linkage initiatives lack corridor-wide harmonisation and inter-agency cooperation, which leads to a lack of transparency for investors and coordination failures among the different layers of bureaucracies (Gálvez-Nogales, 2014). Thus, although the integration of local linkage programmes into corridors is likely to

20 AgDevCo is a donor-funded private equity firm focusing on sustainable agriculture in Africa. They are especially active in East Africa. Please see: http://www.agdevco.com/

21 For more information, please see: http://www.prorustica.com/index.php

enhance their impact, especially for smaller markets, examples suggest that efforts to align linkage programmes and integrate them into a cross-border framework are crucial for their effectiveness.

There are a number of other factors that make multi-stakeholder partnerships more effective and sustainable in linkage-building. For once, multi-stakeholder partnerships should offer formal dialogues to manage expectations and set clear agreed-upon targets. The establishment and development of public–private dialogues (PPDs) that are open to all stakeholders, not only to investors and governments, have the potential to ensure that stakeholders are adequately informed and consulted (Gálvez-Nogales, 2014). This has positive impacts on the design of linkage interventions, but also on the implementation and adjustment of programmes in case investors or local communities wish to express their concerns or address problems. Furthermore, PPDs can offer informal fora for conflict resolution. Also, evidence suggests that in order to be effective, institutional arrangements and linkage programmes should be targeted at promising sectors as well as on more advanced domestic firms (Vermeulen & Cotula, 2010b; Vorley, Lundy, & MacGregor, 2009). In SSA the agricultural sector appears to be one of the most promising fields to establish PPDs or to use already existing structures of stakeholder platforms. For example, the agricultural innovation platforms that are being promoted by the Forum for Agricultural Research in Africa are geographically organised and could therefore act as a discussion vehicle for researchers, investors, SDI operators and developers, extension agents, local public bodies and cooperatives to address linkage and developmental challenges.

In order to make the most out of limited resources, governments should focus on domestic industries as well as firms that have the highest potential to act as multipliers. In linkage programmes, one entry point could be the involvement of mostly large and medium-sized firms or larger farmer cooperatives. This rather targeted approach might, on the one hand, crowd out those firms most in need of exposure to a learning environment. However, on the other hand, targeting prevents public funds from being allocated to farmers and firms that have very little chance of being successfully linked to foreign investors and modern supply chains. The latter would be a waste of public resources. Though some investors might be inclined to use innovative and flexible approaches to integrate SMEs in their procurement, such as small-slot supplies, upfront payments, etc., evidence suggests that the potential for smallholder integration is mostly

limited to those who are better equipped and have better access to financial resources and information (Dannenberg, 2013; Gulati, Minot, Delgado, & Bora, 2007; Vorley et al., 2009). Additionally, governments may adopt broader capacity-building measures at the cluster or corridor level as well as use cooperative models to include those SMEs and smallholders that cannot be directly integrated (see below).

Finally, in order to be sustainable, linkage programmes should have access to short- and long-term funding and ensure monitoring and regular evaluations. Though linkages can develop quickly, it is knowledge spillovers that take time to evolve and manifest in local supplier capacities. Typically, traditional programmes run for 2 to 3 years, which is a rather short life span for learning and adopting new agricultural production techniques, obtaining necessary certifications and delivering according to certain standards (Farole & Winkler, 2012). Beyond managing and maintaining the commitment of investors and local suppliers, institutional arrangements such as multi-stakeholder partnerships should also find a sustainable source of funding that allows long-term operations. This is where donor agencies can help to pool some additional funding, for example in the form of matching grants. Eventually, multi-stakeholder partnerships require a framework for monitoring and evaluation to ensure effective development, targeting and delivery of interventions, compliance with safety, health and environmental standards, as well as the delivery of investor and supplier commitments.

Second, effective *technical and financial business support to farmers and domestic firms* is required to increase their absorptive capacity for spillovers. In order to be effective, business support should *target* promising firms and/or establish *collective structures*; be *industry-specific*; *include research institutes, domestic private-sector* associations and other service providers; and facilitate access to *affordable finance as well as entrepreneurship skills*. The lack of absorptive capacity restricts the potential for countries to benefit from local linkages. In fact, the supplies, services and skills demanded by foreign firms often do not exist locally (Farole & Winkler, 2012). An investors survey underlines that, in many LMICs, poor delivery and low levels of technology are the main obstacles to foreign firms increasing their local sourcing (Farole & Winkler, 2012). For example, in Kenya and Ghana, it is missing scales that are posing a major challenge to buyers. In other contexts, investors criticise the supplier's compliance with quality and safety standards (Hammoudi, Hoffmann, & Surry, 2009). A major reason for non-compliance as well as missing scales is the lack of access to proper finance,

technology, production inputs, training and market information. Though buyers tend to assist their local suppliers, these measures tend to be limited to short-term measures, such as providing short-term capital or facilitating the compliance with health and safety standards (Minten, Randrianarison, & Swinnen, 2007). Thus, there is a strong case for public supply-side capacity-building measures in the form of technical and financial assistance.

Several factors make technical and financial assistance more effective in building local capacities. For a start, one successful approach to supplier upgrading is to target industry-specific, high-potential firms with very clear principles for programme participation (Poulton, Dorward, & Kydd, 2005; Singh, 2009; Vorley et al., 2009). Above all, this delivery approach works best for firms that are located in the more capital- and knowledge-intensive agriprocessing and manufacturing segments of the agricultural value chain. Another successful delivery approach, particularly when aimed at smallholders, is the development of collective or cooperative structures. These structures allow joint investments in common facilities, marketing, certification applications, etc., and therefore are an effective coverage of a wide range of upgrading services (Vorley et al., 2009).

Next comes the integration of industry-specific private-sector institutions and private-sector providers in the service delivery. Often, technical assistance for the upgrading of technology and technical capabilities has to go beyond general ISO standards but also take into account those that are specific to industries and even products (Zeng, 2010). Thus, much of the know-how and information that suppliers require is industry-specific and therefore requires the participation of special private stakeholders and bodies. For example, though mainly funded by public grants, technical training programmes on standards and the certification processes in Chile are jointly designed and implemented by industry associations and other NGOs in the agriculture and mining industries (Farole & Winkler, 2014). Additionally, research institutions and laboratories play an important role in delivering technical assistance to firms and farmers. For example, in Ghana the Cocoa Board provides support in the form of analysis of suitable crop varieties, the provision of seedlings and other research-related as well as financial extension services to a wide number of local farmers in the cocoa industry (Gálvez-Nogales, 2014).

Finally, apart from firm incentives and voucher programmes, local suppliers will require access to finance schemes for long-term investments in

technology, machinery, skills and other capabilities. Technical assistance is not enough. Affordable credit schemes are therefore necessary if long-term spillover effects are to manifest. The terms of credit can be improved through matching grants from donors or participating buyers who wish to extend long-term assistance to a specific group of suppliers. As evidence in most LMICs suggests a very low financial literacy among most SMEs and farmers, these credit schemes should be aligned with basic coursework on entrepreneurship as well as financial and business management (World Bank, 2008b). Currently, many corridor approaches consider the development of corridor centres, which shall pool public efforts for technical and financial assistance and business development services. For example, BAGC has established dedicated financial facilities to support agribusiness companies and farmers located in the corridor through the BAGC Catalytic Fund (Gálvez-Nogales, 2014). At the same time, the SDI operator has introduced a designated facility, the Smallholder Support Facility, which offers technical support and other services to smallholder farmers (Gálvez-Nogales, 2014). However, little is known about its operational design and long-term funding sources (Gálvez-Nogales, 2014).

Third, effective *training programmes and the availability of skilled labour and local R&D* are critical to absorb knowledge spillovers. Effective strategies to address skill gaps and build human capital involve *collaboration incentives* for investors and local educational institutions, *strategic industry-wide partnerships involving the private sector* as well as more *general education efforts.* The absorption of spillovers within SDIs and within linkage programmes is dependent on the level of human capital available among farmers, firm owners and managers as well as in the broader local workforce. Long-term productivity improvements depend on a labour force, entrepreneurs and local organisations that can absorb international know-how, adapt it to local conditions and subsequently drive local technological innovation. Indeed, the diffusion of agricultural know-how is likely to happen through local staff. Foreign investors tend to use more local staff than local suppliers (Farole & Winkler, 2014). For example, in agribusinesses in Kenya and Vietnam, about 75-85 per cent of management, supervisory and technical workers were locals (Farole & Winkler, 2014, p. 251). However, in Ghana and Mozambique this percentage was only 10-15 per cent, implying that skill and labour constraints exist. Indeed, the biggest obstacle to hiring local staff for managerial and technical positions in many African countries was the lack of skilled labour (Farole & Winkler, 2014, p.

251). Similar results are found for larger domestic firms located in African clusters (see Zeng, 2008).

Addressing skill gaps is especially important if SDIs wish to enter into technically more demanding production activities, for example agriprocessing. For this reason, some zone operators have taken on the task to offer manpower services. For example, *maquila* operators in Honduras provide their own labour services to zone-based manufacturers in which they offer engineers and builders for short-term hire (Farole, 2011). However, these zone-integrated labour services are an exception. Most foreign and larger domestic zone-based companies support skills development and knowledge diffusion among their own staff (Farole & Winkler, 2014). For example, SDIs and larger firms often take on some of the more demanding and issue-specific trainings. Yet, in order to ensure a broader diffusion of technology- and knowledge spillovers, governments will need to take on a pro-active role. For example, working in collaboration with SDI operators, governments can improve information-exchange between current skill demands and the supply of skills, programmes, capabilities of local universities and vocational training centres. Additionally, the public sector can actively engage in match-making and skills-building activities by establishing matching research programmes and introducing designated vocational training programmes. Unfortunately, there are only a limited number of SDIs as well as national programmes that focus on the facilitation of labour market spillovers (see also Farole & Winkler, 2014). One of the few programmes is the Kenyan Horticultural Practical Training Centre, which supports skill diffusion across domestic firms, cooperatives and suppliers working with foreign investors and the investors' staff (Farole & Winkler, 2014). Although there seem to be few cases, governments should consider the following important factors when intervening in this field.

To begin with, governments should set in place *collaboration incentives* for investors and local educational institutions. Although investors know best about what kinds of skills and qualifications they need, it is local universities, research institutes and vocational training institutes that know what they can supply. Government might act as a mediator between both parties and establish research and training funds, provide fiscal incentives (tax reductions for research investments) and other incentives to support research collaborations, joint curriculum development and internships. This form of "triple-helix" cooperation of private firms, education institutions and the public sector have proven to be the most effective approach in addressing

technological and skills development in clusters in LMICs (Etzkowitz & Leydesdorff, 2000). In leveraging regional networks, these triple-helix partnerships may be especially effective in SDIs, where a number of local stakeholders come together based on a common geographical denominator. Also, *strategic industry-wide partnerships involving private-sector* organisations are necessary to go beyond individual projects to address skill gaps. This can involve the harmonisation of industry-specific curricula, the certification of degree programmes and the introduction of larger, long-term research projects, for example in agriculture. The Malaysian Penang Skills Development Centre Program, a public–private partnership, is one of the most cited success cases (Farole, 2011). Not only did Malaysian and foreign businesses establish the centre, they also developed the training programmes to their needs and funded the initial equipment and trainers (Farole, 2011). Furthermore, the centre's trainings are constantly updated to match the evolving needs of the roughly 1,300 factories located in the surrounding industrial zones and parks. Another example of a successfully initiated course certification programme is that of the horticulture industry in Chile (Farole & Winkler, 2014).

Generally, these kinds of efforts are rare in the African context. Yet, in Ghana and Kenya, foreign agribusiness investors participated in the development of course curricula and offered accompanying industry placement programmes for university graduates (Farole & Winkler, 2014). Finally, beyond *industry-specific* interventions, more *general education policy measures* are required to absorb long-term spillovers and enhance prospects for more and better employment opportunities. Since many individual investors and firms in the supply chain may be unwilling to invest in training, there is a strong case for the provision of trainings as a public good. Governments should not only rely on the private sector but also address access to quality education in order to improve the local knowledge and skill base in the long term. For example, evidence on several technopoles and clusters suggests that a broad education- and knowledge base is required to ensure the sustainable anchoring of research networks (Gálvez-Nogales, 2011; World Bank, 2010a; Zeng, 2010). General education efforts are not only important for effective linkage-building and spillovers, but are also instrumental for social upward mobility and the inclusion of the local poor. For this reason, governments should not forget to make investments into the broader educational infrastructure.

Fourth, in order to make SDI spillover policies effective, they need to *be integrated into national measures to improve the business environment* and *be aligned with national industrial strategies*. Though certain FDI characteristics have been shown to determine the extent to which spillovers can occur (see Box 2), several researchers have shown that the capacity of domestic firms to absorb spillovers is largely determined by the characteristics of the broader business environment (Blalock & Gertler, 2009; Crespo & Fontoura, 2007; Farole & Winkler, 2012; Lin, Liub, & Zhanga, 2009; Lipsey & Sjöholm, 2005; Meyer & Sinani, 2009). Indeed, the same barriers that constrain the competitiveness of domestic firms are the ones hampering inter-firm linkages and spillovers (Farole & Winkler, 2012). Many traditional SDI programmes have failed to address these barriers. For example, some of the initial zone programmes in Senegal wanted to attract FDI and linkage-building by providing considerable fiscal incentives (Farole, 2011). However, with no broader strategy at hand to substantially improve the broader business environment, most of the expected FDI failed to materialise. As a consequence, linkage and spillover policy has to go beyond spatial approaches and address a number of issues within the broader national regulatory environment, for example gaps in domestic contract enforcement, the transparency of contractual laws and national credit information systems.

Furthermore, spillover policies, especially those focusing on the development of supply-side capacities, overlap with a number of SME, investment and economic policies. Lessons from Mauritius' SEZs as well as from Chinese and Malaysian SDIs highlight that SDIs require long-term policy integration in the economic development strategies of national governments (Farole, 2011; Zeng, 2010). Thus, in favour of informed and coordinated policy planning and service delivery, spillover policies should be aligned with national industrial strategies. The integration and alignment of regional or local spillover policies will require a number of organisational, coordination and capacity-building efforts on the side of local municipalities as well as national governments. Central governments have to make sure local and regional public institutions have sufficient financial resources, manpower as well as expertise to implement and support measures to local suppliers and workers.

3.4 SDI governance

Besides factors associated with physical and soft infrastructure, the performance of SDIs is shaped by the quality of governance at various levels. At the local level, it is principally regional governments as well as operators that govern SDIs. However, national state governance as well as GVC governance also impact on the performance of SDIs. In this report, SDI governance is regarded a cross-cutting theme and is used to describe principles, processes, capacities and techniques that steer and guide collective actions in SDIs. SDI governance is not constrained to governments, but it includes governance among private actors (e.g. autonomous self-regulation) as well as organisational governance (e.g. how to get things done within an organisation). Studying the governance of collective actions allows us to unveil the underlying power structures and dependencies between institutions and different kinds of actors, and therefore helps to explain outcomes beyond *formally* set rules.

In reference to national laws, regulations and norms, it is often regional governments and SDI operators who are in charge of the strategic planning as well as management of zones. Across countries, central governments might play a more or less important role in setting strategic priorities for regional development. However, evidence suggests that the development of SDIs lies mainly in the hands of local actors (World Bank, 2009). This suggests that the way developers and zone operators as well as local public actors govern impacts on investors' decisions as well as on the mid- and long-term performance of SDIs. In fact, most benefits that investors gain from SDIs, such as access to improved hard as well as soft infrastructure, are strongly dependent on how well SDIs are designed, planned, operated and adjusted to changing external environments.

Indeed, anecdotal evidence suggests a strong link between the quality of governance and the economic performance as well as the sustainability of SDIs (Farole, 2011). SDIs that are more adequately designed, planned and operated tend to attract more investment (Farole, 2011). For example, SDIs in Bangladesh were part of a systemic plan and policy to use its comparatively large labour pool for the establishment of labour-intensive manufacturing zones (Aggarwal, 2005). The good timing of the establishment of zones in Bangladesh in the 1980s also enabled local SDIs to take advantage of more structural dynamics in the region (Aggarwal, 2005). Proper steering, guiding and coordination between SDIs and national regulatory authorities

has attracted even more investments and led to a fast expansion of economic zones in Bangladesh (Aggarwal, 2005). In contrast, many African zones suffer from a lack of strategic planning and proper SDI operationalisation (Farole, 2011), for example the recent government zone plans in Tanzania derived from broader industrial policies, that is, the Mini-Tiger Plan 2020. Yet, this has not included any actual planning or development of zones, for instance prior formal analytical and strategic studies on potential locations and comparative advantages (Farole, 2011).

What also seems interesting is the fact that, in contrast to many Latin American and Asian countries, African zones have not necessarily developed strategic industrial clusters that focus on a few core manufacturing activities, but rather ones that have spread across a number of different activities (Farole, 2011). This also implies a lack of strategic focus. The failure to develop and to implement a strategic framework for SDIs is problematic due to the fact that African zones are late entries into highly competitive international markets. However, the young age of many zone programmes offers opportunities for improvements and adjustments. In fact, Farole (2011) finds a positive, though insignificant, correlation between the operating length of a zone programme and outcome measures, that is, investment levels, exports and employment.

Many of the failures in individual African SEZ projects can be attributed to a variety of governance factors, including a lack of effective strategic planning and management, national policy instability and poor rule of law (Watson, 2001). Thus, some of these reasons originate from organisational deficits among SDI developers and operators. Others refer to regional or national governance issues. Finally, the governance factors explaining SDI performance can also originate from sources "outside" of zones and national territories – such is the case of GVC governance – in which lead firms and global economic dynamics determine SDI outcomes. The following paragraphs address several of these governance deficits in the planning, operation, management and adaptation of SDI programmes in more detail.

3.4.1 Strategic planning of SDIs

The establishment of SDIs should be a result of a *thorough strategic planning* and *be oriented at current market demand*. Successful SDIs have often been planned in advance. For example, in Honduras, a strategic location close to the US market, its preferential market access as well as the advantage

of low-cost labour led to the development of large outsourcing operations in the apparel industry (Farole, 2011). These zones anticipated a further increase in competitive pressures from Asia and diversified and specialised their portfolios in advance (Farole, 2011). In the design process of SDIs, strategic decisions have to be made with regards to: location, the country's or region's competitive advantage and potential industry focus; the short- and long-term goals and development targets; and the nature of the investments. Whereas some of these more general decisions are made at the government level, many are also subject to decisions from regional steering committees or remain with the developer or operator of the zones. Since in LMICs many of the latter are partly owned by government agencies, it is assumed that most long-term strategic decisions are a core mandate of public authorities.

In most countries, decisions on the location of zones are highly political, as they have strong distributive implications. Many programmes in Africa have failed to develop a clear and transparent set of criteria or commission feasibility studies as a basis for location decisions (Farole, 2011). The experience with developing SDIs in peripheral areas has been mostly disappointing (World Bank, 2009). One of the few success stories of spatially targeted incentives and initiatives to support economic growth in specific areas is that of South Korea, where "markets picked the place and governments pushed the pace" (World Bank, 2009, p. 253). In this case, the national government offered production advantages to investors in strategic industries; however, the areas of production were "picked" by the market (Park, 2009). As a result, market-driven industrial and regional policies led to the development of different regional production specialisations, which were accompanied by public infrastructure investments (Lee, 2008). What can be learnt from this is that the actual demand for investing in a particular location, area or region is a necessary condition for the success of spatial policies.

Another important factor contributing to the success of SDIs is their focus on a *current comparative advantage*, which requires a sector- and industry-targeting process. Identifying the strengths and weaknesses in a country's or region's capabilities requires analytical efforts to investigate international and regional trade data, current investment flows and an objective assessment of current advantages and endowments (e.g. labour costs and capabilities, natural endowments, market access, strategic location, etc.). Developing a targeted marketing and investment strategy on the basis of these factors will increase the likelihood of attracting investments and ensuring credibility

as a production location. For example, the most successful SDIs in Ghana are those that focus on natural resources and agriprocessing activities (Farole, 2011). However, although targeting seems to be an obvious and expected process in SDI development, empirical evidence across the globe shows that policymakers, spatial planners and SDI developers have often misjudged the potency of comparative advantages and market forces in shaping economic developmental trajectories (World Bank, 2009). The disappointing performance of Kenya's and Tanzania's textile and apparel sectors also hints at the fact that the timing of the entry into industry matters (Kamau, McCormick, & Pinaud, 2009). With relatively high labour costs and strong competitive pressures from "factory Asia", the entry of Kenyan and Tanzanian apparel manufacturing zones into international markets came at an unfavourable time and limited the short- and mid-term growth perspectives from the outset. Thus, rather than aiming to abruptly change a place's economic potential, spatial planners and SDI developers would be better advised to learn about a location's particular strengths to help develop it further.

Developing a *limited number of clear goals, priorities and implementation strategies* have shown to be the best approach to achieve the objectives of an SDI or zone programme. Spatial visions have strong implications for the optimal set-up and design of a spatial development initiative, that is, its infrastructure alignment, its organisational features and requirements as well as the sequencing of investments. Given the fact that most SDI programmes face resource restrictions, regional planners as well as developers should focus on setting a limited number of realistic goals and ensure these come with measurable targets as well as an implementation strategy. Unfortunately, across the globe many spatial development goals have been found to be overambitious, broad, not clearly formulated or badly operationalised (UN, 2008). For example, most SDI programmes include a wide range of goals, such as attracting FDI, increasing exports and foreign-exchange earnings, employment creation, technology and skills development, facilitating local spillovers and community development (Farole & Akinci, 2011). The obvious danger of overloading SDIs is the lack of focus, the collision of priorities and the discouragement of potential investors, which might be overwhelmed with local expectations. The latter scenario was prevented in Vietnam by reducing the short-term objectives of planners and developers to two objectives, namely employment creation and technology transfer, and by reducing local content requirements to FDI. In contrast, Kenyan

programmes initially covered three goals but added several others during later phases of SDI development. Evidence on Asian corridors, namely the GMS and CAREC programmes, suggests goals should be attached with clear priorities, as they guide the proper sequencing of investments and provide SDI planners with a framework to monitor progress and anticipate potential bottlenecks (Gálvez-Nogales, 2014).

Planners and developers of SDI zones should specify the *quality of investors* as well as the *SDI model* in advance. Planners, developers and operators of SDIs need to clarify what kinds of investments they want to attract. Different investment types and business models are likely to generate different economic, social and environmental impacts, both positive and negative. Attracting the "right" investors is particularly important for long-term objectives such as spillovers. Well-negotiated and selected foreign investments – if properly combined with domestic resources, given current local capacities – could create positive synergies to support long-term spatial economic development. Although what is "right" for an SDI might vary according to the proposition and prioritisation of SDI objectives, mechanisms should be developed to discourage purely speculative investments. As a result, high-level government commitment and capacity across administrative structures are essential to enforce strict compliance with investment plan requirements.

Finally, investments in SDIs can be attracted through two different SDI models, namely the enclave and the single factory model. Whereas the enclave model involves the licensing of investments within a spatially confined area, the single factory model allows firms to license their individual factories that might be located outside of industrial parks or other special economic zones. Planners and developers should consider carefully which investment model to pursue, as it has implications on the performance of SDIs. The advantage of the latter model is flexibility in location while maintaining fiscal and trade benefits. However, the disadvantages are the lack of agglomeration benefits, such as infrastructure provision, access to administrative services and spillover effects occurring via co-location with other firms. Quantitative analysis does not provide a clear favourite model, but evidence on successful SDIs highlights the effects of co-location and concentrated institutional support (Farole & Akinci, 2011; Zeng, 2008, 2010). However, most evidence form African zones suggests that single factory free-zone firms in Africa, for example in Senegal, Kenya and Tanzania, fail to reap the investment climate advantages, in both infrastructure and

services, that are available to firms based inside the industrial zones (Farole, 2011). Indeed, it appears that successful SDI regimes in Africa are operated and maintained best in enclave model zones (Farole, 2011).

3.4.2 Know-how and budgetary constraints

A *lack of know-how as well as tight and uncertain operating budgets* reduce the quality of mid- to long-term planning and management. Since all SDIs have started operations only recently, many suffer from a lack of expertise and know-how on how to steer and manage them properly. Generally, SDIs take a long time before they take off. In most Latin American and Asian SDIs, economic operations were slow in the initial 5-10 years but took off 10-15 years after their launch (Aggarwal, 2005; Farole, 2011). As a result, it is highly likely that many African SDI operators have not yet established what works best.

However, a structural problem of underperformance is associated with short planning horizons due to tight and unpredictable budgets. As most SDIs in Africa are not autonomous but instead rely on public funding, resources, financial as well as personnel, are in short supply (Farole, 2011). This is particularly challenging during the initial stages, when no or little revenue from dedicated investor services can be retained. For example, Kenya's EPZA operated with 17 staff members for the first two years, though an independent organisational assessment recommended that at least 44 staff members take on the roles as investment promoters, operators and regulators (Farole, 2011, p. 187). Similar problems have been reported in Ghana, Kenya and Lesotho (Farole, 2011). The unpredictability of public spending is another hurdle in managing SDIs sustainably. Budgets tend to be allocated on a year-by-year basis, which impedes mid- to long-term strategic investments in improved facilities and service delivery (Farole, 2011). Besides, the financial dependence on public budgets also makes SDIs vulnerable to political influence and corruption.

3.4.3 The SDI regulatory authority

Dysfunctional institutional and administrative structures of the SDI regulatory authority lead to low-quality regulation, inter-agency coordination failures as well as institutional conflicts. The SDI regulatory authority (RA) constitutes the most important actor determining the success

or failure of SDIs. The SDI RA can be autonomous, be part of a national department, ministry or investment promotion agency, or be composed of a multi-stakeholder commission including public authorities, SDI boards and private members, for example key investors, companies or SDI service providers (Gálvez-Nogales, 2014). The best experiences have been made with an autonomous design under a board of directors that includes cross-ministerial public actors as well as representatives from the private sector (Farole, 2011). Its main function is to ensure the coordination of many key actors and the compliance of economic, social and environmental standards. This involves thematic domains such as business registration and licensing, environmental and work permits, customs, taxation, land management and zoning, etc. Although these functions are of central importance to the performance of zones, evidence suggests that in Africa most RAs are weak: they have no strong mandate, are sparsely staffed and do not always hold the necessary expertise to implement their core functions (Farole, 2011).

The reasons for a weak mandate in Africa mostly lie with weak laws on SDIs and a subsequent lack of power to fully enforce the mandate against other national or local authorities and agencies (Farole, 2011). Delegation of authority can also take place via a direct order of ministries or a high-level minister. This institutional arrangement was adopted in larger zone programmes, for example in China (Zeng, 2010). Farole (2011) finds that in African zones the delegation of authority over the licensing and registration of businesses, taxation and monitoring of labour compliance was not an issue, but regulatory functions over customs, environmental permits and immigration were highly problematic. A possible reason are political economy considerations. Another fact to consider is the capacity limitation of SDI RAs to take on all of these tasks. As many agencies and authorities fight over tight resources, power and rent-seeking opportunities, an unclear mandate perpetuates inter-agency tensions and conflicts (Khan, 2000). For example, in Nigeria a conflict between the NEPZA and customs prevented local market sales for zone-based companies, even though legislation regarding the authorisation of local market sales was passed several years ago (Farole, 2011). There are some best practices on improving inter-agency cooperation, though research on this matter is scarce. For example, in some cases staff exchanges between ministers as well as inter-ministerial committees might be useful to facilitate better inter-agency cooperation (Farole, 2011). Furthermore, a mediating but powerful high-level authority should hold the position as head of the SDI board to ensure that effective

and binding commitments between authorities and agencies are made (Farole, 2011).

3.4.4 Private-sector involvement

Private-sector involvement and participation in the development and operation of SDIs may improve their performance; however, effective government regulation is still required to warrant SDI effectiveness. Although there is variation across the different regions, about half of all economic zones worldwide are privately owned and the other half are publicly owned (FIAS, 2008). In East Asia, especially China, most zones are government-led (World Bank, 2009). However, recently, many private-run zones have been established in South and South-East Asia, for example by Infosys in India (World Bank, 2009). On average 51 per cent of zones in SSA are estimated to be privately owned and run; this includes many single factory units (Farole, 2011). Thus, the majority of African enclave model zones are still largely owned and operated by public authorities, for example in Lesotho, Ghana and Senegal, but the private sector is also increasingly operating zones or integrated via PPPs, for instance in Kenya, Tanzania and Nigeria (Farole, 2011). There is no conclusive evidence on whether privately or publicly owned SDIs are more or less successful. Whereas some argue that privately owned and operated firms are inherently more efficient and effective, others highlight the success of government-led zones in East Asia (World Bank, 2009). Farole (2011) also finds no clear pattern in SSA, as public and privately owned zones do not appear to be performing better or worse than the other. Generally, they both underperform (Farole, 2011).

Privately run zones are often seen as a better option for a number of reasons. Their location tends to be chosen by market demand rather than by a political agenda. Also, because of their expertise in zone planning, development and operation, they are more efficient in delivering a wide range of services to their clients – faster and better than most zone authorities. This is especially the case if SDI operators and authorities suffer from a lack of resources and know-how. Indeed, evidence on weak delivery capacities, tight budgets, understaffing and poor implementation in most African zones supports this argument (Farole, 2011). The weak mandate of zone authorities as well as the highly politicised conflicts between several agencies imply that, though there is no clear evidence on the supremacy of privately run zones, the development and operation of zones might be the most appropriate option. Yet, even if

privately owned and operated zones might be more effective and efficient in running SDIs, they undoubtly require effective regulation and government services, such as infrastructure provision, institutional support (e.g. permits, customs, etc.), and checks for environmental and social compliance.

Independent from who owns and runs SDIs or zones, the government should consult private companies and private-sector associations in strategic decisions regarding SDIs to make sure public interventions are needs-based and in demand (Klinger, 2010). To keep a good relationship with the private sector, that is, with private developers and zone operators, zone-based private firms and private-sector associations, an institutional mechanism is needed. Institutionalising the voice of the private sector can be done by installing representative roles in the SDI or zone board, or private-sector participation can be achieved through formal partnerships and/or informal dialogues, as envisioned in PPP models, for instance. Most African zones struggle to incorporate the private sector in a meaningful way; however, exceptions exist. For instance, in Lesotho the majority of zone board directors are from the private sector, and an institutionalised PPD is put in place to communicate industry-specific trends and needs (Farole, 2011). Furthermore, several PPPs with the organised private sector were set up to address issues within zones, such as skill gaps, health problems among workers (mostly due to HIV), and environmental externalities within the textile and apparel sectors (Farole, 2011). Also, upcoming economic corridors, such as SAGCOT, have envisioned PPPs as a mechanism for private-sector integration and improved service delivers (Gálvez-Nogales, 2014). Beyond PPPs, state-to-state partnerships on zones have been used in many East Asian cases, notably between China and Taiwan as well as Japan and Singapore, to leapfrog on best practices in zone development and operation. Currently, some state-state partnerships can be found between Senegal and Dubai, Ethiopia and China, Zambia and China, Nigeria and China, and Mauritius and China (Gálvez-Nogales, 2014). However, little evidence on their performance has yet to be presented.

3.4.5 Local participation

In warranting the interests of local communities in SDI development, *effective local participation mechanisms* are required. Whereas traditional SDI approaches included mainly public and a few private actors, nowadays, modern spatial approaches such as economic corridors are influenced by a

multitude of public and private entities at the local, national and international levels, that is, governmental bodies and ministries, public agencies, private service providers, companies and civil society organisations (Hartmann, 2013; Sequeira et al., 2014). In integrating as many organised interests as possible, the challenge remains to incorporate the interests of local communities, which will be affected the most by the establishment of SDIs. With rising demands for more inclusive business models in LMICs, planners and developers of SDIs are under ever more pressure to consider the perspectives, concerns and expectations of affected communities. Traditionally, in most LMICs no or very few measures, such as public hearings, consultations and information campaigns, were taken to integrate affected communities in the planning process of SDIs. In the past, spatially induced developments on local communities have been problematic, in particular in the natural resource and agricultural sectors, where land developments caused massive displacement and resettlements, but only meagre employment options (De Wet, 2006; Downing, 2002). This can be exemplified by China's resettlement practices during its "zone fever" period in the 1980s (Cartier, 2001; Huang & Yang, 1996). Even more recently, the track record of integrating local communities in the planning process of SDIs is poor or non-existent.

For instance, local protests emerged recently over a deal between the Lagos state government and a group of Chinese investors to develop a special economic zone close to the Lekki Lagoon, located east of Lagos City. Local communities were concerned about the emerging land use, energy grid works and associated resettlement terms, as well as over the fact that employment opportunities in local construction works were mainly taken by immigrating Chinese workers (Bräutigam et al., 2010). Eventually, the continued protests resulted in an understanding, with the local community being granted an equity stage in the Nigerian shareholdings as well as more employment opportunities for local workers (Bräutigam et al., 2010). Nonetheless, few local community protests led to such a favourable outcome, which is why institutional mechanisms need to be set in place to prevent land tenure conflicts, negative environmental impacts as well as potential exclusion. However, adequate and effective governance mechanisms to ensure local participation are rare. *De jure* mechanisms and institutional arrangements are often undermined by poor implementation and political economy factors. As shown in Section 3.3.3, procedural rights, environmental and social impact assessments, as well as consultation procedures as

safeguards for transparent and fair land deals are often weak or sidelined. Economic corridors such as the Beira and SAGCOT programmes have therefore installed multi-stakeholder partnerships that engage with farmer associations and local civil society organisations to address their needs and concerns (Gálvez-Nogales, 2014). However, these models are fairly new, and it remains to be seen whether they are effective. Yet, effective, transparent and inclusive mechanisms to integrate local communities might not necessarily need new models for participation, but more importantly a strengthening of existing legal, regulatory and policy frameworks.

3.4.6 Global value chain governance

SDI planners and operators require an *understanding of GVC governance* to identify developmental opportunities. GVC dynamics strongly affect the potential of SDIs to build local linkages and integrate the interests of local firms and communities. In the case of agriculture, whether or not smallholders will be incorporated into SDI development depends on factors that go beyond the quality of the land deal-making process, the political, legal and regulatory framework of the state, and the relative power and strategies of organised farmer associations and unions. Smallholder integration depends also on the governance and development opportunities within GVCs (Kaplinsky & Morris, 2002).

As a result, if SDI planners want to design appropriate soft interventions and wish to make use of developmental opportunities arising from private investments, there is a need to identify the potential contributions of investors as well as the challenges and possibilities for local farmers and businesses at several stages of the value chain. Figure 2 shows a typical, but generic, agricultural and food value chain. The agri-food value chain consists of five central stages: inputs, agricultural production, agro- and food-processing, wholesale and food retail, and final consumption. Transport and logistical and trade services connect all stages throughout the value chain.

Creating inclusive SDIs is not just a question of setting in place the right policies and incentives. The economic integration and upgrading of SDIs is also largely determined by the economic governance within value chains, that is, the power structure of economic relationships between the participants. There exist producer- and buyer-driven chains in the agri-food sector. Whether a chain belongs to one or the other category mostly depends on the degree of concentration in the markets for agri-food input supplies (agro-chemicals,

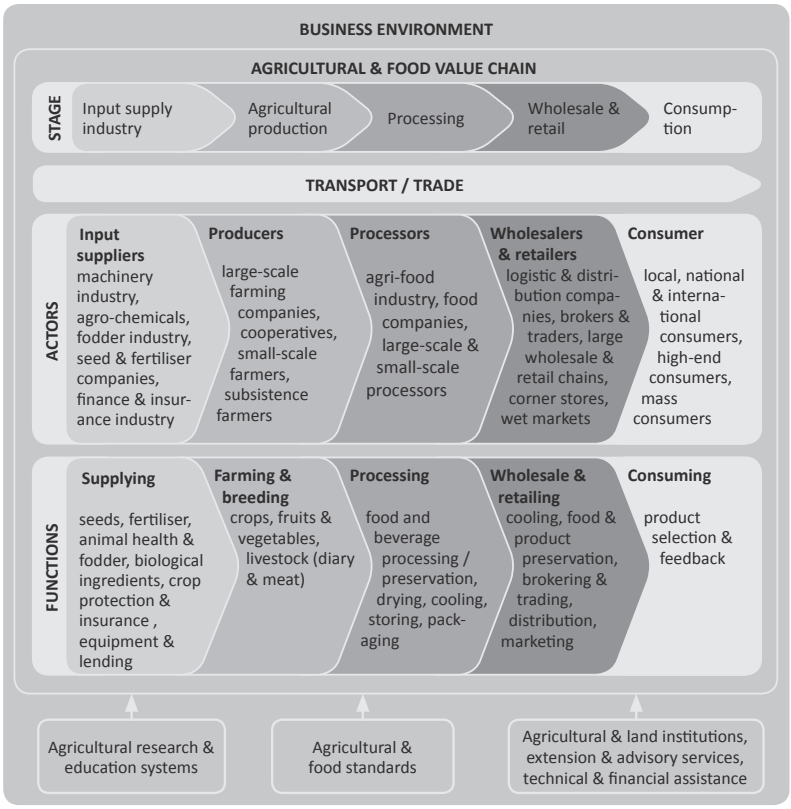
seed and equipment companies), the agri-food production supply (farmers and processors) and demand (wholesale, supermarkets and other food retailers). The number of actors at a particular stage of the value chain, for example the number of competitors, has important implications for the bargaining power and the resulting profits created at a particular stage of the chain. Additionally, a value chain actor's size and influence, that is, its economic power in setting standards and imposing demands, has consequences for the way economic transactions are governed between chain participants. Recent evidence suggests that power has shifted in globalised agri-food chains in favour of wholesalers and retailers vis-à-vis producers (Reardon, Timmer, Barrett, & Berdegué, 2003). Against this background, FDI inflows and agro-corridor programmes raise developmental concerns over the survival of traditional farming and processing in many African countries.

Still, determining whether agrocorridors and modern agriculture and food industries will lead to the exclusion or inclusion of traditional agricultural value chain actors is a complex undertaking (Altenburg, 2006a, 2006b; Zoss & Pletziger, 2007). So far, empirical research on agrocorridors and their capacity to warrant smallholder integration is scarce. More general evidence on agriculture and food markets in LMICs shows that the modernisation and concentration of agricultural production, processing and procurement systems through FDI, the rise of supermarkets and the entry of other modern agro-food companies is most likely to lead to their exclusion, for example for South Africa (Sautier, Vermeulen, Fok, & Biénabe, 2006), Central America (Berdegué, Balsevich, Flores, & Reardon, 2005) and the MERCOSUR trading bloc (Farina & Reardon, 2000). In contrast, in many Asian cases and in South Africa, agricultural policies, regulatory safeguards and the organisations in smallholder cooperatives facilitated a successful inclusion of farmers, small producers and processors into modern agri-food value chains (Dannenberg, 2013; Gulati et al., 2007). Those smallholders who managed to establish linkages with modern agri-food value chains showed considerable gains from integration. These gains accrue due to the demand for stability and higher average prices for farm produce, higher margins and higher incomes compared to traditional markets, for example in Kenya (Andersson, Kiria, Qaim, & Rao, 2013; Rao & Qaim, 2013). Further evidence confirms that, in developing countries, agri-food value chain integration increases incomes and reduces poverty in rural areas (Maertens & Swinnen, 2008).

As a result, in order to seize developmental opportunities for traditional agri-food actors and local communities, policymakers and agro-corridor

operators need to learn from prior successful examples of smallholder integration (Gulati et al., 2007). This involves the identification of local entry barriers and the setting-up of adequate regulations, institutional frameworks and incentives (Vorley et al., 2009). Even so, evidence suggests that there are limitations to what SDIs, for example agrocorridors, as a spatially restricted scheme can do to alter the governance of value chains and associated dynamics in the agri-food sector. Therefore, it becomes even more important for SDIs to align their integrative support measures for local stakeholders with market demands and national industrial policies.

Figure 2: Overview of actors and stages of the agri-food value chain



Source: Author

3.4.7 Policy stability and institutional support

The long-term success of SDIs needs a *long-term commitment, continued institutional support, policy alignment and flexibility*. Evidence suggests that SDI performance requires long-term policy stability and consistent high-level institutional support to build confidence in investors. Many East Asian success stories exemplify how policy stability, high-level political commitment and national policy alignment over long periods of time lead to a gradually increasing influx of FDI. In China, Malaysia and Singapore, high-level political leadership advanced and supported the development of SDIs (Aggarwal, 2005; Farole, 2011; Zeng, 2010). For example, in the initial years of Vietnam's zone programmes, these were championed by the prime minister and handled under his office (Farole, 2011). Also, in Mauritius, a former foreign minister and an influential entrepreneur, namely José Poncini and Gaëtan Duval, championed the EPZ programme and ensured an effective, high-level political commitment that was not only written on paper, but also manifested itself in the successful implementation of zone strategies. Furthermore, in most East Asian countries, a flexible and pragmatic approach enabled authorities to respond to the ever changing needs of SDIs. However, changes and adjustments in SDI regimes were introduced gradually and communicated transparently. In order to preserve policy consistency and alignments, most SDI programmes were derived from broader industrial strategies and harmonised if broader structural developments took place, for example in South Korea and China (Chang, 2003). This institutional integration helped to address bottlenecks beyond the narrow policies and measures aimed at SDIs. In contrast, many African SDI programmes are characterised by policy reversals, inconsistencies in SDI policy formulation as well as institutional anchoring. In Nigeria and Senegal, several reversals in investment, trade and customs policies occurred that caused foreign investors to withdraw or suspend further investments (Farole, 2011). For example, although Nigeria initially allowed FDI in the local market sales of apparel and furniture, this commitment was later cancelled by introducing a complete ban on imported products in these sectors, even from zone-based operations (Farole, 2011). Also, unclear institutional anchoring of SDI programmes – zone programmes were initiated by two separate ministries simultaneously – in Tanzania created investor confusion about the leadership structure (Farole, 2011). Although some African SDI programmes were launched by high-level political leaders, for instance by President Jerry Rawlings in Ghana, the political

commitment was not well institutionalised under the president's purview. In fact, many African zone programmes fall apart once political leadership changes (Farole, 2011). As a result, rather than functioning as a catalyst for broader economic and industrial change, SDIs fall back to become just one of many different trade and investment policy instruments.

3.4.8 Monitoring and evaluation

Informed planning and management of SDIs requires a *framework for M&E*. Though many lessons learnt can be retrieved from these sections, SDIs will require adjustments every step of the way. Previous experiences will inform successive steps for adapting to local conditions, needs, potentials and challenges. Ideally, SDI secretariats should monitor and measure activities, whereas a neutral organisation should evaluate the overall performance, consistency and coherence of these activities to achieve defined targets (Farole, 2011). Eventually, this M&E process allows for the identification of programmatic gaps and elements that need to be redesigned, adjusted or added.

However, few SDIs in Africa develop an explicit M&E framework that clearly operationalises development targets, measures performance according to key criteria and ensures objective assessments (Farole, 2011). With regards to steering and evaluating sustainable investments in agriculture and food markets, the Principles for Responsible Agricultural Investments constitute an interesting framework and useful instrument for policymakers, investors and evaluating bodies alike (Committee of World Food Security, 2014).

4 Conclusions and policy implications for agrocorridors

There is mounting evidence that SDIs are very difficult to get right. Across LMICs, the overall performance of SDIs tends to be mixed. Only a very small group of SDIs, mostly in East Asia and in some Lain American countries, have been successful in achieving their intended goals. Within the African context, most zone programmes show low levels of investment and exports, and very moderate employment impacts. In fact, many programmes have shown signs of stagnation and decline. Several necessary but no sufficient conditions exist for success.

Overall, this report shows that the economic as well as social performance of SDIs is inherently linked to the quality of the national investment climate. Though the "island" approach of SDIs promises to address and remove various growth obstacles for regional economic development, evidence suggests that spatial approaches rarely deliver a considerably improved environment beyond that which is available "outside" of a targeted area. However, it is also argued that there are several factors that constrain an SDI's effectiveness. First, the role of adverse physical and economic geography, that is, poor location, small market size and low market demand, should not be underestimated. Second, the lack of good quality physical infrastructure, effective regulatory infrastructure regimes as well as social infrastructure contributes to the underperformance of many SDIs and should be highlighted. Third, several deficits in the SDI-specific and national soft infrastructure impede the performance and sustainability of SDIs. Fourth, a variety of governance failures as well as political economy factors impact on the sustainability of spatial development approaches.

So what do we take from this review of SDIs for agrocorridor development in sub-Saharan Africa?

In SSA, agriculture is the major employer and provides millions of people with livelihoods (World Bank, 2009). Enhancing the performance of the agricultural sector is crucial to increase food production, improve food security and eventually reduce poverty within the region (Timmer et al., 2012). In fact, in most rural regions and in many African countries, it must be the key driver for economic development and off-farm job creation by feeding and fuelling value chains. However, in order to transform the economies in SSA, agricultural productivity must increase and value must be added to the large reservoir of natural and agricultural resources through processing and manufacturing activities (Johnston & Mellor, 1961). Indeed, the large majority of sub-Saharan African economies is characterised by commodity production, mining and some agricultural exports. After decades of stagnation, African agriculture has experienced impressive growth in the last few decades. From 1964 to 1983, the average annual agricultural growth rate was 1.8 per cent, followed by 3.2 per cent from 1984 to 2003, and 3.5 per cent from 2003 to 2010 (Badiane & Makombe, 2014; Nin Pratt & Yu, 2008; World Development Indicators, 2014). This production increase originates from a mix of factors, notably land, and to a lesser extent yield increases – the latter being a consequence of the growth

of total factor productivity followed by a growth of input use (Benin, Nin Pratt, Wood, & Guo, 2011; Fuglie & Rada, 2013).

Thus, SSA is likely to adopt a growth and *industrialisation strategy that is based on agriculture, agribusiness* and agriprocessing industries. The potential of such a strategy is heightened by the massive land reserves the continent holds, by large existing yield gaps that are to be closed and by the fact that only a very small portion of current yields are being processed locally. Other factors, such as the high number of imports, the relatively high labour costs in manufacturing relative to labour productivity as well as the relatively unconducive business environment in terms of security and governance, considerably complicate the implementation of a classical industrialisation strategy in SSA.

Although most states on the African continent agree on this agriculture-led development strategy, the central question remains of how to shape the development of rural and landlocked areas while fostering inclusive agricultural and agribusiness development. In light of this challenge, SDIs, most notably agrocorridors, are on everyone's lips. The launch of *agro-corridor programmes is meant to drive changes in the investment climate that enable agricultural production networks to flourish.* The theoretical mechanisms behind the development of spatial economic structures are the interplay between decreasing transport costs, increased labour force mobility and increasing returns at the firm and industry levels (agglomeration economies). As a consequence of these dynamics, agriculture and food hotspots are expected to emerge in some selected regions and countries (Gálvez-Nogales, 2014). Specifically, supporters of the new economic geography and trade theory argue that, by adopting agro-based SDIs, it is possible to form business environments in a way that allows either the creation of new and/or the development of existing agricultural and food hotspots. This is because the provision of dedicated infrastructure and targeted (industry-specific) incentives encourages a critical mass of agribusinesses to locate in a particular environment. After a critical number of agribusinesses have located their operations in these areas, agglomeration economies will further attract other firms and investments, leading to a sort of virtuous snowball effect, that is, cumulative causation.

There has been a long debate over the years as to whether SDIs are an effective policy instrument (World Bank, 2009). There exists a strong consensus that policy-driven SDIs in peripheral and lagging regions have

largely failed (World Bank, 2009). Orthodox economists often disqualify spatial development approaches as second-best options to an economy-wide reform and development process. Indeed, as this report has shown, it is the integration of SDIs into a broader national development strategy that makes them successful. However, recent discussions on the development of spatial initiatives see them as a supplement to country-wide reform, as opposed to creating isolated and arbitrarily distributed economic structures. In fact, some argue that SDIs are key to inducing country-wide structural transformation, as they allow policymakers to introduce and test politically sensitive policies and reforms on a smaller scale (Farole, 2011; World Bank, 2009).

If designed and implemented properly, SDIs can act as important pockets of economic vitality for a region and country. SDIs are nevertheless risky and expensive projects. From the analyses in Sections 2 and 3, we can see that many SDI programmes in Africa have failed to attract substantial investments and achieve long-term economic and social objectives. There are only a few success stories in SSA, namely Lesotho, Madagascar and Mauritius, and even those are struggling to upgrade and develop more sustainable sources of competitiveness. The majority of African SDIs suffers from poor infrastructure, heavy bureaucracy, inefficient and corrupt customs, as well as weak regulatory capacity and governance. Thus, the challenges facing Africa's SDI are still enormous. However, the vast number of former SDIs appears to have failed, in fact, because they have underestimated the comparative disadvantages (bad infrastructure, heavy bureaucracy, high labour costs) and misjudged the advantages (land, resources, agriculture).

Yet, despite the weak past performance of most African SDIs, they still can be a useful instrument in driving Africa's economic development. As outlined in Section 3, SDIs can contribute to economic and inclusive development only under certain conditions. Applying these lessons to currently evolving agrocorridors in Africa should prove to be a valuable exercise. In fact, several reasons exist as to why agrocorridors are likely to be *more* effective than former SDI experiences in the African context:

- *First, agrocorridors entail market-driven strategies to use regional comparative advantages in favour of certain areas and locations*. Agricultural production involves many semi-rural, rural and peripheral areas. Thus, given adequate natural resource endowments and provided a market demand is within reach, a commercial case for the development of towns, rural areas and hinterlands often exists. In contrast, many SDIs

in the past were developed from the perspective of – highly politicised – regional development. As a result, economically unfit locations were chosen that did not provide the necessary factor endowments for economic agglomerations to evolve and become competitive. Rather than being "picked" by the market, locations were "picked" by the state (World Bank, 2009). Agrocorridor development must not result in an evenly spread-out territorial development, to the contrary: depending on regional comparative advantages, it is highly likely that, in the beginning, agricultural production as well as agriprocessing activities will concentrate in a few, rather densely populated locations. As a consequence, agrocorridors must not connect "nowhere to nowhere through nowhere" (Srivastava, 2011, p. 3), but build, to a large degree, on the already existing and functioning spatial economic geography of economic centres, for example special economic zones, technopoles, industrial parks, and estates and clusters focused in agriprocessing industries. Thus, agrocorridors should be seen as a framework that strengthens agricultural production in rural areas by connecting it with a number of productive economic agglomerations and activities to create a virtuous circle of effective demand and supply. Thus, one can say that the economic geography lessons of former failures do not automatically argue against the instrument of agrocorridors, if the mentioned principles are duly taken into account. This, however, also means that – if successful – agrocorridors will exacerbate inequality, at least between rural areas, and compensating measures for other regions may be needed later. This distributive imbalance needs to be communicated at the political level.

- *Second, greater attention to agriculture and natural-resource-based sectors as well as favourable timing are likely to make agrocorridors more successful than former SDIs*. In the past, many African SDIs employed traditional SDI models that were aimed at attracting investments in labour-intensive, light assembly-based manufacturing activities, mainly garments and textiles, and partly electronics, by providing preferential access to export markets, substantial fiscal incentives and requiring a few links to the local economy. This export-led growth model in traditional sunrise industries has been the chosen developmental path of most East Asian success stories. However, within the current African context, this approach was largely mismatched with local factor endowments, for example high labour costs and small input markets. In the near future, most African countries are unlikely to become competitive traditional manufacturing platforms. In the post–financial

crisis environment of traditional export markets, namely the United States and European economies, African economies are not equipped to compete with "factory Asia" over the already stagnating market for light manufactured products. Strategically, African economies are well advised to leverage their current comparative advantages and move towards natural-resources-based processing, including the agricultural, commodities and minerals sectors. In fact, most recently, growth in SSA was largely fuelled by demand for commodities, most notably via expanding South-South linkages (e.g. China in Bräutigam et al., 2010). However, whereas minerals and non-agricultural commodities do not offer much scope for local labour-intensive value addition, agricultural commodities do, for international and even more so for regional and national markets. A major advantage of the agricultural and food industry is that it can directly cater to local end-consumers, who tend to prefer local foods and tastes. In fact, a growing middle class in many sub-Saharan African countries offers the opportunity for increasing the range of processed foods, driving the need in agrocorridors to add further stages of processing, and therefore value.

Evidence suggests that a reorientation of existing zone programmes towards more dynamic sectors has already taken place in SSA (Farole, 2011). For example, Ghanaian zones have become increasingly concentrated in cocoa, timber and other agriprocessing activities. Also, in Kenya, zone programmes have shifted away from promoting traditional garment manufacturing towards agriculture and agriprocessing. This signals that the timing for the launch and development of agrocorridors is right. In order to leverage comparative advantages, agrocorridors will, on the one hand, require a stronger focus on building transnational, national as well as regional linkages through value chains. On the other hand, they will need to drive the development of competitive agriprocessing zones and clusters. These efforts have to go beyond achieving spatially focused internal efficiencies and address typical challenges such as external scale and the coordination of production, storage, processing, transport and consumption.

- *Third, agrocorridors are strategically integrated into broader industrial strategies to improve the national investment environment.* Contrary to traditional SDIs, agrocorridor development lays out a conceptual framework that is inherently linked to the development of the national investment climate. By connecting several areas and

locations, agrocorridors strengthen the physical as well as institutional linkages within national as well as regional territories. Thus, in theory, agrocorridors are largely incorporating the main message of this report, that is, that the success of SDIs also critically depends on what happens *beyond* spatially confined areas and locations. In other words, the extensive geographical and sectoral coverage of corridor development is more likely to foster reforms and improvements in the national investment climate (for instance, poor national physical infrastructure, lengthy customs procedures, and weak legal and regulatory frameworks) than was the case in former spatial approaches. Agrocorridors will therefore have the biggest developmental impact when they are focused more on structured efforts to improve the consistency between spatial and national industrial policies and institutions. At the same time, agrocorridors open the possibility for LMICs to focus their efforts on stabilisation and economic development on particularly promising regions and areas.

On the other hand, several old challenges and anticipated new ones exist. The future sustainability as well as the potential of agrocorridors for scaling-up depends, to a great extent, on how successful governments can overcome the following challenges and issues.

- *First, the lack of quality physical infrastructure remains a critical gap in most African countries*. *Supporting the development of quality infrastructure investments along agro-corridors, as well as improving the regulatory infrastructure regime and social infrastructure, is necessary to make agrocorridors economically viable and inclusive*. Connecting agricultural production, processing and trade centres will be necessary to overcome distance, reduce transport costs and improve the commercial case. However, simple transport infrastructure investments are not enough. Especially in the agricultural case, it is necessary to create a critical mass of accessible transport routes and connected agricultural land to generate a commercial case. This means that one main transport route connecting the economic dots on the landscape will not be enough. In fact, in addition, many medium-sized and smaller feeder roads as well as complementary energy, irrigation and storage infrastructure investments are needed. Finally, governments and corridor planners have to make sure investments are sequenced and implemented in a way that ensures the complementarity, quality and maintenance of these infrastructure investments. Two main approaches can be distinguished:

policymakers may target (a) historic corridors or (b) greenfield corridors (Sequeira et al., 2014).

Historic corridors, also called brownfield corridors, encompass already existing trade routes and older economic agglomerations that may have fallen into disuse or are sub-optimally used and may need substantial reinvestments (Gálvez-Nogales, 2014). In contrast, greenfield corridors involve the establishment of new trade routes and agglomerations that aim at facilitating the growth of productive capacities in yet underdeveloped and unconnected regions. Each approach has its advantages and disadvantages. Historical corridors rely on an already existing transport and trade network that can be extended and improved while demand for it is secured due to its current use. Upgrading and extending the existing infrastructure of historic corridors might also be the most cost-effective way to create new economic dynamism in a region. Yet, a mere extension and improvement of transport and trade services might not be sufficient to alter the flaws and drawbacks of existing transport networks, address maladjusted and dysfunctional corridor organisations, and eradicate overlapping administrative jurisdictions (Sequeira et al., 2014). Existing corridors may not be able to use the potential of the agricultural sector due to their unfavourable geographical placement. For example, the historic Trans-Kalahari corridor crosses mainly desert. In other cases, some corridors may not be designed to access major African consumer centres, but only trade gateways for exports, such as ports. Export markets are, however, more difficult to access for the majority of African smallholders than national and regional markets.

Thus, in some cases, a clean start with greenfield agrocorridors is necessary to reap the benefits of mutually enforcing, innovative organisational developments and economic synergies between the agricultural sector and the transport and trade sectors. A major drawback of new corridors, however, is the uncertainty of demand for new transport and trade routes. Greenfield investments in transport, trade and economic activities are also highly interdependent and require proper sequencing for triggering growth processes in the region. That is, if investments are not complementary to each other or not substantial enough in size, greenfield corridors might not reach a critical mass of economic activities and render the corridor economically inviable. Consequently, spatial planners will have to ensure that greenfield infrastructure investments are properly integrated into effective forward

and backward linkages in the region. In many low- and middle-income countries, policymakers are likely to have to address problems within old corridors and agglomerations while simultaneously assisting and conducting the development of new corridors. As historic and greenfield corridors operate at different stages of a corridor life cycle, they cannot be considered different types, but they do face different investment costs and growth bottlenecks. Thus, policymakers need to be aware of their corridor target strategy in order to adopt an appropriate treatment for physical infrastructure. Generally, we can say that whereas historic corridors require a new stimulus in organisational development, greenfield corridors are characterised by the need for heavy and sequenced investments in the transport and trade network.

Turning the argument in a positive direction, the agricultural growth concept can avoid the frequent phenomenon whereby transport infrastructure is not used sufficiently and rapidly due to a lack of supply response capacities of the affected agricultural and rural sector. This phenomenon is particularly strong in typical rural sub-Saharan African regions with relatively low population densities, few economically strong private actors, and few public and private services available. Converting existing transport infrastructure projects into agrocorridor programmes can help make them economically more viable.

Beyond making high-quality physical infrastructure investments, governments have to ensure that effective, spatially blind institutions are set in place to regulate infrastructure sectors (transport, energy, water, telecommunications) to counter negative externalities – for example congestion, pollution and safety hazards – and oligopolistic tendencies, which may cause price hikes and low-quality infrastructure maintenance. Finally, in order to facilitate regional and national migration flows, an inclusive agrocorridor approach should also involve the accompanying development of social facilities, for instance, hospitals, childcare and other social services. Especially the local population should be able to reap the benefits of local investments and have access to these social infrastructures. In warranting their access, SDI investors and planners may increase local ownership and acceptance as well as minimise ethnical tensions with newcomers and migrants.

- *Second, in addition to providing physical infrastructure, the public sector requires substantial and structured efforts to improve the transnational,*

national as well as regional soft infrastructure to make agrocorridors effective and inclusive. Although most of the problems associated with agrocorridors are associated with poor trade routes and connectivity, a lack of clear, transparent and effective institutions, regulations and policies also deter investments and hamper regional economic development and cross-country regional economic integration. Hence, governments and agrocorridor planners continuously need to work on a clear, transparent and inclusive legal and regulatory framework that provides crucial public goods, such as political stability and security, the rule of law, access to public services and the environment. Based on former experiences with overlapping and ambiguous legal and regulatory frameworks, it is advisable to promote spatially blind institutions rather than to develop SDI-specific regimes. This is also because, in the past, spatially bound institutions and regulations have been shown to be ineffective in addressing problematic and corrupt customs clearance, tariffs and non-tariff barriers; lengthy bureaucratic procedures; distorting incentives; poor investment promotion; and employment- and environment-related issues. Furthermore, spatially bound institutions and regulations have also created unclear regulatory responsibilities, and therefore contributed to considerable frictions and tensions among public authorities. These institutional and regulatory challenges are also likely to emerge within African agrocorridors. This is because agrocorridors add several layers of institutional complexity due to their regional and/or cross-border design.

If trade facilitation was a major challenge in the past, it sure will be a problem for transnational agrocorridor development now. Most governments in the past failed to develop efficient trade and customs processes to increase the effectiveness of their economic zones. Addressing trade-related bottlenecks, however, will need to go beyond the introduction of dedicated customs sub-directorate and service agreements between different national customs regimes.

Effective cross-country regional integration will need to address several issues with regards to market access, such as tariffs and non-tariff barriers as well as local market sale restrictions for agriprocessing zones and clusters, in addition to requiring coordination and harmonisation of sector- and product-specific agricultural and food standards and policies. Though some cross-country regional agreements are already set in place to facilitate transnational market access, for instance the East African

Community or the Common Market for Eastern and Southern Africa, it remains to be seen how well these agreements will be implemented and whether they gain a new role within the context of agrocorridors (Kuhlmann et al., 2011). Yet, in contrast to former SDIs, which were small in geographical scale, for example SEZs and industrial parks, agrocorridors hold the potential to address these regulatory challenges in a more holistic manner due to their extensive geographical scale and associated national political relevance in connecting several economic agglomerations.

With regards to land market agrocorridors, such as envisioned in the G8 New Alliance initiative, these are likely to cause unprecedented economic and social implications if, and since, they include large-scale land acquisitions. Large-scale land acquisition for modern agricultural production on the one hand, and the need to ensure sustainable livelihoods for the majority of smallholder farmers in most of SSA on the other, pose enormous political and social challenges for governments, regulatory authorities, land planners and administrations. Several international investors originating from industrialised regions, such as Europe and North America, as well as emerging economies, such as China, India, Brazil and South Africa, have recently intensified their search for opportunities to establish agricultural production in SSA, for instance in Ethiopia, Kenya, Ghana and Tanzania (Bräutigam et al., 2010; Kuhlmann et al., 2011). It is against this background that planners of agrocorridors have to be cautious in ensuring they generate socially acceptable results for a number of different actors, that is, investors, smallholders, planners, local workers, etc. Poor land planning as well as the lack of proper land and procedural rights in land deals have led to severe land market distortions, a lack of sustainable investments, and failures to effectively address the concerns of smallholder farmers and local communities. In other cases, massive conflicts arose. In order to ensure a better land deal for rural communities, stronger land institutions and political commitments within agrocorridors are needed.

In making agrocorridors inclusive and by creating spillovers, governments will also require dedicated cross-sectoral as well as sector-specific policies to link domestic actors with foreign investors and with evolving global agricultural value chains, that is, match-making programmes, PPPs, outgrower schemes, etc. The removal of regulatory barriers as well as ineffective linkage and spillover policies

at the national level are critical to this process, as are spatially targeted technical assistance and financial incentives for local firms and farmers participating within agrocorridors.

- *Third, agrocorridors require a governance framework that codifies the programme strategy and defines the rules and responsibilities for all public and private stakeholders involved. However, the de facto implementation as well as political economy considerations are of equal importance*. Smart regulations and policies to improve the soft infrastructure of agrocorridors and the broader national environment are not enough if the mandate of institutions is weak and institutional capacities are poor. In the past, many authorities planning, developing, promoting and regulating SDI programmes lacked the political and institutional mandate as well as resources and capacity to carry out their responsibilities properly. Political commitments should therefore be mirrored in the equipment of agrocorridor authorities with regards to expertise, staff and authority. If this is not the case, agrocorridors may be vulnerable to vested interests and unfavourable political economy dynamics, or simply remain paper tigers. Thus, in order to make agrocorridor governance more inclusive, a clear and transparent programme strategy is required that defines the rules and responsibilities of the game and includes the private sector as well as local communities through institutionalised mechanisms. Sustainable programme strategies should also aim for the long game and be continuously supported by high-level political leaders to ensure policy alignment and consistency. Finally, those implementing agrocorridors should learn from former mistakes and set up a framework for M&E to make informed planning and management decisions.

As agrocorridors continue to spread across sub-Saharan Africa and many other LMICs, it is of central importance for policymakers to learn from past experiences of spatial development initiatives and to anticipate the emerging challenges of new spatial development models. This report has given an overview of SDIs in LMICs by providing insights and lessons on their economic and social performance. The study shows that there are many things that can be learnt from older SDIs. However, to be successful in leveraging the potential of agrocorridors, more research on these very complex SDIs is required.

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