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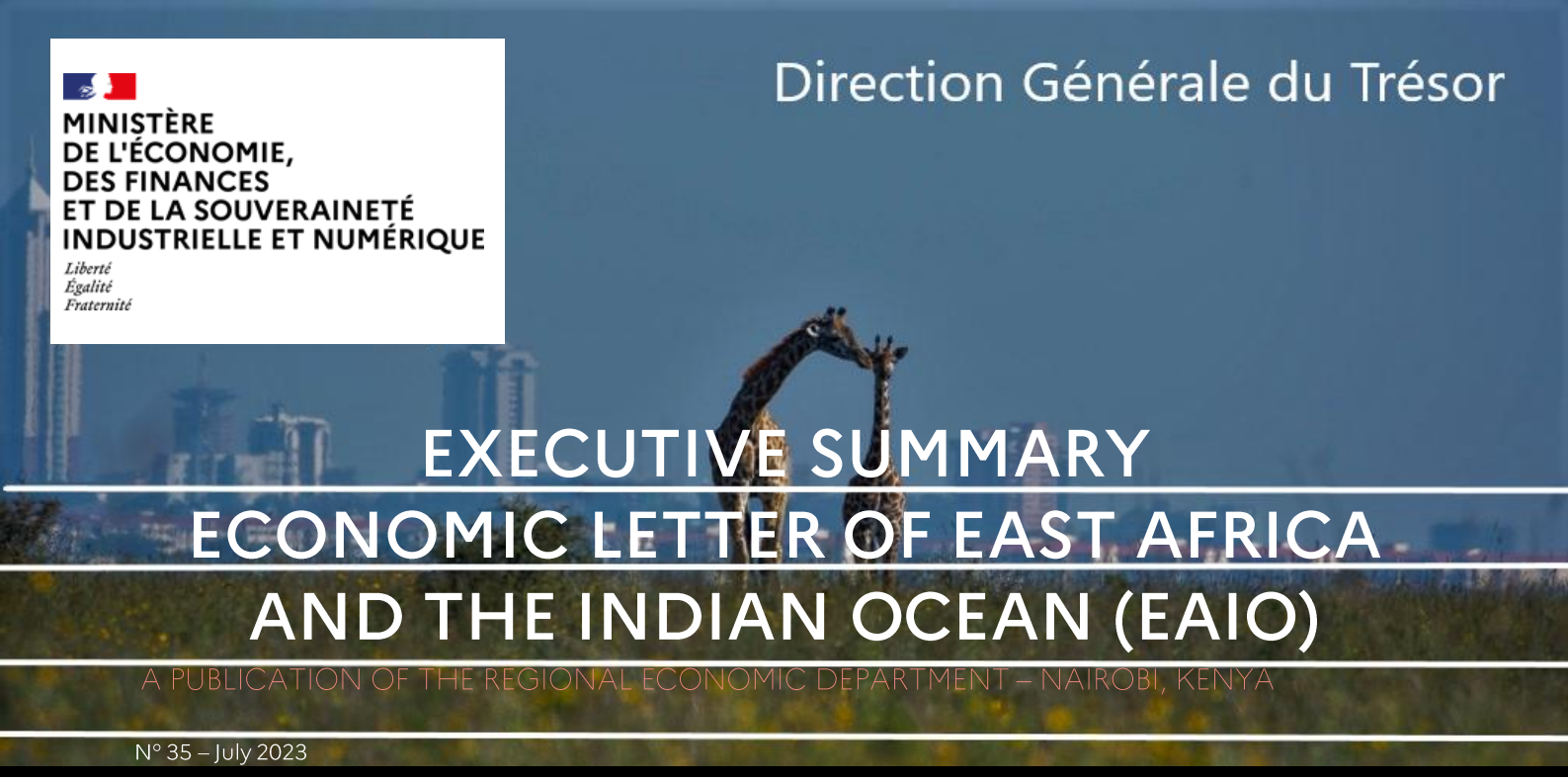

EXECUTIVE SUMMARY
ECONOMIC LETTER OF EAST AFRICA AND THE INDIAN OCEAN (EAIO)

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Smart cities in EAIO

In concise...

Smart cities in EAIO could help combat challenges common in the zone such as significant urban growth, urban congestion and the dominant informal sector. The use of information and communication technologies within the city, and the smart city concept in general, is often seen as a priority by governments in the region. Development partners are an extremely important source of support for the sector, both in terms of financing and technical support. Start-ups offer a range of solutions to meet users' needs, making success of a bottom-up strategy possible.

In detail ...

Definition of smart cities and concrete examples

The Economic Commission for Europe and the International Telecommunication Union have jointly drawn up a definition of smart cities. **"A smart city is an innovative city that uses ICT and other means to improve quality of life, efficiency of urban operations and services, and competitiveness, while ensuring that the economic, social, environmental and cultural needs of current and future generations are met."** Singapore is considered the world's smartest city by the IMD Smart Cities Index. The use of digital technology covers a wide range of fields, including the deployment of autonomous vehicles, connected streetlights equipped with the Internet of Things (IoT) to measure environmental parameters (temperature, humidity) and plan the city's transport and urban planning based on these aspects, and so on. In this way, smart cities can help improve many sectors (mobility, health, waste management, governance, energy) through the use of ICT.

In the East Africa and the Indian Ocean region, smart city projects are gradually emerging. Two types of projects can already be identified: Projects starting from scratch, such as Konza Technopolis or Kigali Innovation City, which are new cities or neighborhoods integrated and designed to be smart cities; and the cities characterized by the gradual introduction of a number of digital technologies providing answers to urban planning issues in existing cities, as in the case of the Kampala Connect application or the Intelligent Transport System already in place in Nairobi.

Smart cities can introduce solutions and technologies that provide at least a partial response to the challenges of urban development

With a relatively low GDP per capita and 25 % of the world's population expected by 2050, urbanization in Africa faces a number of obstacles. **First and foremost**, **demographic growth in East Africa, particularly the urban areas, highlights the urgent need for efficient and appropriate infrastructure.** Between 2010 and 2020, the urban population increased by almost 48 % in Kenya and 64 % in Ethiopia. Tanzania's capital, Dar Es Salaam, is set to become a megacity by 2050. **Lack of planning has resulted in urban sprawl, which is highly significant in the territory, and leads to an increased need for commuting** (which causes congestion), major environmental impacts and the reinforcement of socio-economic inequalities via fragmentation of the territory. By way of illustration, the estimated cost of congestion in Nairobi amounts to 1 billion USD per year, in terms of lost time and productivity. **To combat these challenges, the development of public transport networks and the introduction of intelligent junctions to improve traffic flow (e.g., ITS in Nairobi)** is one of the effective remedies. Climate change is causing drought and migration, which are also putting pressure on urbanization. Projects such as Green City Kigali, which involves the development of affordable housing built from local raw materials, could provide a response to the current ecological challenges facing the region's cities. However, it remains to be seen whether the innovative solutions offered by smart cities are really more environmentally friendly than the traditional, more straightforward construction methods, for example.

Informal employment and housing are also a feature of East African cities. The informal economy accounts for 55% of GDP in sub-Saharan Africa, with 9 out of 10 people in informal employment. In Ethiopia, over 56% of the urban population lives in slums. Smart city solutions could help integrate these homes and jobs into the formal economy. **A number of startups are attempting to formalize the work** of motobike taxis and increase user safety. One example is SafeBoda, set up in Uganda. MapKibera's mapping of Kibera, carried out with the help of local residents, in a sense formalizes the existence of this district within the Kenyan capital.

In addition, **the population is youthful, with around 50% under the age of 20, which means that access to ICTs and digital literacy training can lead to greater adoption of new technologies**. What's more, cell phone connectivity is expanding rapidly (122.8% mobile penetration rate in Kenya, for example) and entrepreneurship is booming on the continent, a sign of the sector's leapfrogging process. Despite this, differences between the region's countries are still very marked: the mobile penetration rate, for example, is just 51.8% in Somalia and 61.7% in Burundi. **Some countries are quite advanced in terms of information and communication technologies, but do not use these innovative solutions to improve their cities, as is the case in Tanzania.** According to the World Bank and the United Nations, a city's intelligence can be measured by the number of cell phone subscribers, internet users, fixed broadband internet subscribers and fixed telephone line users.

Smart city projects are at the heart of certain government strategies, gradually supported by development partners

To meet the challenges of urbanization and the needs of the growing number of urban dwellers, governments in the region are increasingly committing to smart city development projects. Government-sponsored projects are often large-scale and require considerable resources. Most of the development strategies of the countries in the region do not mention smart cities as an objective, **but smart-city projects are nonetheless often seen as a showcase of the country and its aspirations.** These projects are seen as a way for East African and Indian Ocean countries to attract investors and partners to the region. Large-scale projects, however, often seem to lack a pragmatic angle in their formulation for example when it comes to completion times and the actual operational capabilities of intelligent systems.

To enable emerging cities to embark on the path of digital transition, donors are stepping in with financial or technical assistance, the first course of action being improving digital literacy. In Kenya, the *Digitalization of Technical and Vocational Education Training* (TVET) project, to be carried out by KfW development bank with support from AFD and the European Union, aims to promote better access for young people to vocational training adapted to the demands of a digital economy. **Donors usually position**

themselves on specific projects, Japan International Cooperation (JICA) and the Korea International Cooperation Agency (KOICA), for example, are particularly active in ICT projects.

The role of the private sector remains vital

Despite ambitious plans, governments lack the human, technical or financial resources to implement smart cities. The most successful projects are therefore often led by the private sector. This is the case, for example, of Moka Smart City in Mauritius. This project was supported by a major sugar group and has enabled the development of numerous infrastructures. International giants are also taking an interest in the region's smart cities with Huawei and microsoft involved in the development of Konza Technopolis.

To meet the needs of city users, some startups are providing ICT solutions in the fields of transport, education, payment, etc. These solutions enable simplified access to certain services that are sometimes difficult to access physically. Unlike the large-scale projects launched by governments, those of startups often require fewer resources and are operationalized more quickly. In many cases, these projects also aim to foster inclusion through catering to their needs. **Nairobi's transport needs, for example, are met by matatus, and the mapping of the different lines enables easier access.** This solution has been implemented more quickly than the BRT lines that are still in the planning stage.

A bottom-up strategy could be possible, to improve the inclusion of the whole population in projects and the speed of response through a gradual transformation of cities towards more intelligent solutions. In any case, this strategy could complement city planning projects to make them more inclusive.
Several opportunities may arise for French companies. In the region, *Tactis, a* consulting firm specializing in digital regional planning, is developing solutions to facilitate the development of smart cities. The company has benefited from a FASEP (Fonds d'étude et d'aide au secteur privé) grant to develop a citizen application**. *Bluspark is* developing *smart metering* solutions for water and waste management,** which could enable governments to better manage these services and the crisis situations that may arise. The *Bluspark* platform enables local authority employees to communicate all the information they need to resolve an incident on the network from their smartphone. It also enables inspections and maintenance operations to be optimized by monitoring the state of the network**. In the infrastructure field, to extend connectivity and thus enable the development of smarter cities, French company *Sagemcom* is** developing a relay antenna installation business, including a rural electrification component. **Telemedicine could also be developed in the region**, enabling improved access to healthcare for all, with mobile medical

Agence Française de Développement's (AFD) vision of smart cities

AFD is one of the most active donors in the field of smart cities. In partnership with IDDRI (Institut du développement durable et des relations internationales), AFD has developed a smart city guide for local authorities to help them meet the challenges of digital transition. **The French donor advocates an experimental approach which is based on the implementation of pilot solutions that allow certain parameters to be varied in order to propose a move to scale** using the best possible solution. Digital development is one of the 8 priorities of the AFD's strategic plan, which aims to become a benchmark donor in the digital sector.
Among the projects developed by AFD in this sector, the most notable in the EAIO the *African Smart Town Network* (ASToN) project, that provided technical assistance to 12 African cities between June 2019 and June 2022.

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