

FOCUS

Sectoral intervention framework

# MOBILITY AND TRANSPORT



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# SECTORAL INTERVENTION FRAMEWORK MOBILITY AND TRANSPORT

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# SUMMARY

The mobility of people and goods is one of the key conditions for achieving the sustainable development goals (SDGs): it is indispensable for enabling people to access employment and basic services (health, education); for the effective and sustainable functioning of a productive economy; and so that cities can remain efficient, breathable and liveable.

Mobility is shaped by individual choices made by a multitude of free economic actors, who are part of a “mobility system” combining infrastructures, associated services and a regulatory framework. As a result, we need to pull all of these levers to enable mobility systems to meet two main challenges:

- o sectoral challenges linked to a fast-growing demand for mobility in a context of exploding urbanisation and trade between the major economic regions being re-balanced worldwide;
- o external challenges: the fight against climate change and air pollution, the new energy paradigm and the digital revolution, the combination of these leading to new economic models and organisational frameworks.

To better address these challenges, AFD Group has adopted a new “Mobility and Transport” sectoral intervention framework which derives its “Territorial and Ecological Transition” strategy at a sector-specific level. In line with the AFD Group 2018–2022 Strategy, and to align with the orientations recognized by the transport sector’s international community, the “Mobility and Transport” sectoral intervention framework focuses on four sectoral goals:

1. **Inclusive mobility** systems, towards isolated or disadvantaged regions (equity and territorial cohesion), vulnerable communities (service access for all) and the poorest (financial inclusion).
2. **“Green” and low carbon** mobility systems designed to maximise the positive impacts and avoid, mitigate and compensate the negative impacts on the environment; and aimed at reducing local pollution and accelerating the decarbonisation of the sector.
3. **Efficient and sustainable** mobility systems: effective sectoral governance (planning, financing, management rules) for operations and maintenance; sound technical choices to boost local economies at a reasonable cost and over the long term (resilience).



4. **Safe and secure** mobility systems for all, which covers the safety of complex systems and road safety, as well as the fight against the insecurity experienced by women in transport and public spaces.



These sectoral goals will be **complemented by three cross-cutting acceleration levers**:

1. **Encourage technological and digital innovation** for mobility, by supporting our partners and implementing pilot actions.
2. **Effectively mobilise the private sector**, with a balanced risk-sharing, to optimise investments according to various contexts; Proparco plays a critical role in implementing this lever.
3. **Mobilise French and European players**, mainly by leading peer-to-peer exchanges in order to spread French and European good practices and knowledge – Expertise France will have a central role to play in this.

These goals are inherent in the design and analysis of all transport projects. However, they are applied differently depending on the territorial scale concerned, as each territory has specific challenges and issues. This also means that the territorial scales will guide the accountability of this sector operational framework.



**At the urban scale, the challenge is to promote liveable and inclusive cities**

AFD Group has mainly financed infrastructure for mass public transit systems (bus rapid transit, tramway, light rail, metro), which are capital-intensive projects with long implementation periods. This will be continued in the AFD Group new sector operational framework as it still is the main request from our beneficiaries. However, greater support will be given to our local and national counterparts for upstream mobility planning in order to build a concerted, long-term vision with integrated transport and urban planning. The scope of operations will also be expanded to finance not only infrastructure, but also to optimise traffic flows (traffic management), improve quality of service (modernisation of bus and minibus fleets) and develop non-motorised transport modes (pedestrian sidewalks, bicycle lanes). These projects are less capital-intensive but they have strong social and climate-related impacts. Lastly, in a cross-cutting approach, the projects will explore and seek to incorporate a “gender” dimension and support for innovation.



### **At the national scale, the challenge is to develop the economic and social potential of territories**

Networks interconnecting regional capital cities are vital to enhance local economic prospects and to build up national cohesion. It is also important to ensure that the rural areas have access to markets and services through good connectivity. This requires road, rail and waterway networks developed in a controlled and sustainable manner to serve territorial projects. As a continuation of the previous operational framework, public operators' governance, maintenance policies and road safety remain central areas of focus. Lastly, to better meet the pressing need to tackle climate change, AFD Group will continue to support policies promoting the development of low-carbon transport modes (waterways, railways, etc.) and will also provide more support to projects aimed at improving energy efficiency of vehicle fleets, whether public or private.



### **At the international scale, the challenge is to integrate economies into the global trade system**

AFD-funded projects will aim to connect territories to the major international trade corridors and hubs, with focus on safety and security, the necessary energy transition of the air and maritime transport sectors, and the need to develop hubs better integrated into the local fabric so as to boost the economy and employment within a territory.

**Over the period 2012–2017, the financing approved by AFD Group in the transport sector amounted to a portfolio of around €7.4 billion, which is between 10 and 15% of the AFD Group total commitments and an average of €1.2 billion a year.**

**Over the 2018–2022 period, AFD Group's average commitment for mobility is expected to grow to reach a yearly €1.5 billion. Continental Africa, which was recipient of more than half of the financing over the previous period, will remain the main beneficiary. Urban mobility, which already accounted for over half of the financing, will remain the main intervention sector.**



## PART ONE CHALLENGES AND SECTORAL GOALS





## I. MOBILITY, A DRIVER OF SUSTAINABLE DEVELOPMENT

Mobility is a key condition for **ensuring people's access to employment and basic services** (education and health, in particular) and **an effective enabler for the local economy**. Planning the mobility of goods and people in a sustainable manner and building a mobility “system” requires a combination of supply of infrastructure, associated services, and an adequate regulatory framework so that people benefit from effective, equitable and sustainable solutions.

Yet, **mobility systems are undergoing profound changes**: changes relate primarily to territorial transitions and growing urbanisation on all continents, which amplifies mobility needs and also raises the question of services coverage for less densely populated rural areas. These changes are also linked to the globalisation and concentration of production centres and resulting flows; to technological and digital changes, of course; and, lastly, to the needed decarbonisation of the transport sector, which will result from the ongoing revolution in power supply systems.

# A. Mobility of goods and people, embedded in the Sustainable Development Goals

By adopting the 17 Sustainable Development Goals (SDGs) in 2015, the United Nations Assembly offered a renewed vision of development with a universal and integrated dimension. In this vision, mobility stands out as:

- o **a key focus area for SDG 11 (sustainable cities) which promotes “cities and human settlements that are inclusive, resilient, safe and sustainable”;**
- o **a direct indicator for SDG 9 (infrastructures) which expresses the needs of companies for “resilient infrastructure which consolidates sustainable and inclusive industrialization and fosters innovation”, and SDG 3 (health) for the “road safety” and “air quality” dimensions;**
- o **an indirect objective for all the SDGs centred on people’s needs**, particularly access to health care, education, jobs...;
- o finally, **a lever to reach SDG 5**, which targets “gender equality and the empowerment of women and girls”, as they use cars less than men and are more dependent on public transport, pedestrian or cycling facilities, and improved safety in transport.



**TARGET 11.2:** “provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations...”. In 2030, 60% of the world’s population will be living in urban areas and 95% of this growth will take place in cities in developing countries.



**TARGET 9.1:** “develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on an affordable and equitable access for all”.



**TARGETS 3.6 AND 3.9:** “halve the number of deaths and injuries from road traffic accidents” and “substantially reduce the number of deaths and illnesses from...air...pollution and contamination”.

## B. Mobility, a key lever against climate change

The transport sector produces 14% of global greenhouse gas (GHG) emissions (all sectors and gases combined, equivalent to 7.7 gigatons of CO<sub>2</sub> in 2015), with over 90% dependency on fossil fuels. Three-quarters of this total are produced by private and public road vehicles and around half of this total is emitted by cities. In addition, emissions of the sector are increasing at the fastest pace, particularly in emerging countries. Indeed, fast-growing urbanisation coupled with economic growth is leading to a strong increase in the number of trips made (people and goods) and vehicle use.

Without resolute action, transport sector emissions will increase by 140% by 2050, 90% of which will come from countries in the South.

The solutions for low-carbon mobility are well-known. They combine four aspects which are key to the energy transition of the sector. These need to be embedded in coherent and well-structured sectoral strategies:

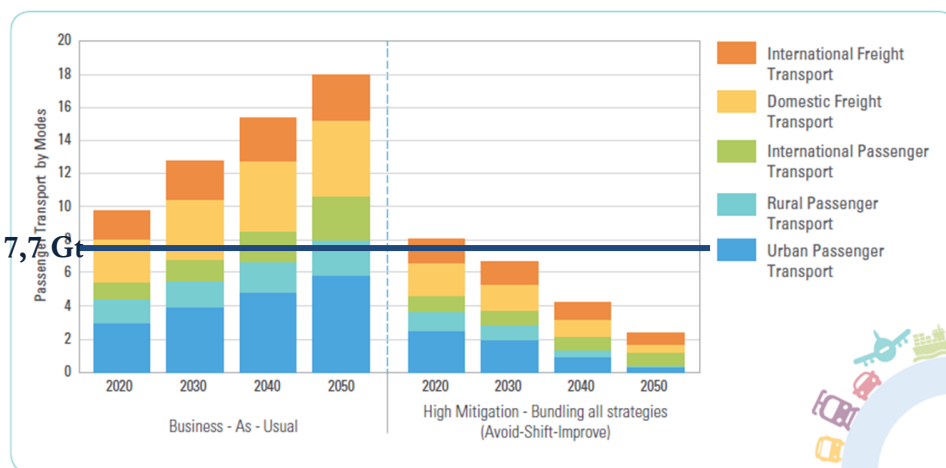
- o **Avoid**, as much as possible, motorised trips of passengers and goods by reducing the number and distance of trips,
- o **Shift** trips to low-carbon transport modes,
- o **Improve** the energy efficiency of vehicles and fuels,
- o **Enable** these actions through effective, integrated and sound governance.

	Reduce and minimize the need for motorised travel for goods and people	Mobility system efficiency
<b>AVOID</b>	By mixing land-use (housing, employment, services) within territories and promoting compact cities to limit the travelled distances and the number of GHG-emitting trips; By changing behaviours and access to services: telework, e-commerce, e-services; By relocating parts of supply chains and prioritising short-distance trade.	
	Shift to low-carbon transport modes	Trip efficiency
<b>SHIFT</b>	By promoting non-motorised modes such as walking or cycling; By promoting mass-transit systems on densely populated corridors, while limiting the use of personal fossil-fuel powered vehicles; By promoting rail or waterway freight rather than road freight when economically viable.	
	Improve the energy efficiency of vehicles and fuels	Vehicles efficiency
<b>IMPROVE</b>	By improving the occupancy rate of vehicles; By improving the efficiency of traction systems (fuel consumption, etc.); By massively deploying electric vehicles, from two-wheelers to electric buses, with the understanding that decarbonising electricity generation is another pillar of the energy transition; By developing the use of alternative fuels (biofuels, bio-gas, hybrids) for road, air and maritime transport.	
	Support integrated governance	Governance efficiency
<b>ENABLE</b>	By defining a national transport strategy as national levers (norms and standards), and participative frameworks at city or regional level; By ensuring good governance of urban transportation (transport authorities, meaningful geographical and functional areas, human and financial resources); By encouraging the sustained participation of the civil society in major structural choices.	

## Which trajectory(-ies) towards decarbonisation of the sector?

### 1. The challenge: cut the sector's emissions by two-thirds by 2050, when the business-as-usual scenario would lead to a 100% increase

Figure 24: Transport Mitigation Potential across Sub-sectors (2020 to 2050)<sup>366</sup>



Of the 7.7 Gt CO<sub>2</sub> emitted by the transport sector (2015 figure), 75% are from road transport (passengers and freight). According to SloCaT (2018), if global warming is to be limited to 1.5 °C, global emissions would need to be reduced to around 2.5 Gt globally by 2050, with a “net zero-emission” target by 2060 (for the most developed economies) and by 2080 (for the rest of the world).

### 2. Stringent prerequisites: new zero-carbon energy vectors (decarbonised electricity mix, hydrogen and sustainable biofuels)

Decarbonising transportation could not be achieved without radical progress in engine technologies and vehicle fuel efficiency. Although this energy-related prerequisite applies to all transport modes (road, air, maritime...), the potential reduction that can be reasonably expected from each differs greatly depending on the motorised alternatives that will be (credibly) available by 2050. The scenarios set out today hold the following assumptions: i) electric vehicles will soon be financially competitive with internal combustion engine vehicles, and electric vehicles will be common by 2050 (including vehicles using fuel cells or, absent these, ultra-light hybrid or biofuel-powered vehicles); (ii) most rail transport will be electric; (iii) a key underlying assumption, in developing countries, is that electricity generation will be largely decarbonised and mature enough to accommodate the arrival of electric vehicles; iv) credible alternatives will be available for trucks (hybrid? biofuels?); and v) low-carbon propulsion (biofuels, hydrogen...) will be available for air and maritime transport. For these assumptions to materialise, strong incentive-based public policies will be necessary.

But these “*Improve*” levers (energy efficiency for vehicles and fuels) will not suffice. New sustainable forms of mobility in cities will need to be promoted (shared electric vehicles, non-motorised modes...), to densify flows (public transport, rail or waterborne freight...), to optimise trips by using digital technology and intermodality; and, more difficult, to reduce the number and distances of passenger and freight trips for all transport modes: urban densification, relocation of industrial production, telework... all these measures go beyond the transport sector.

### 3. Trajectories to be tailored to countries

A few orders of magnitude: in Africa, the total number of vehicles (45 million) is scarcely higher than that of France (39 million); today, China is driving the automobile market. Different countries will thus have differentiated trajectories, mainly depending on their current rate of motorisation and infrastructure provision, their future growth, their capacity to innovate, the maturity of their power supply sector... While emerging countries are already opting for electricity-based mobility, the poorest countries will lag behind when it comes to adopting expensive technologies or stringent technical standards. However, being less motorised, they depend less on fossil fuels and personal cars, and are more able to change their mobility behaviours... Also, transformation in the air and maritime transport sectors will be spearheaded by developed countries, before being more widely disseminated.

Implementing these solutions for low-carbon mobility requires a radical shift in both developed and developing countries:

- o For urban mobility, these solutions often respond not only to the global challenge of tackling climate change, but also to the local challenges of reducing traffic congestion and air pollution and providing mobility for all. These solutions can only be put in place with strong support from local authorities, in order to invent a new model for the city.
- o For the mobility of goods, the challenges are more complex due to the globalisation of trade. The paradigm shift will thus require coordinated action by all States, professional organisations and the private sector, as well as strong local policies that adopt clean solutions for the “last mile”.

## C. Mobility, towards technological, digital and societal revolutions

The transport sector has undergone several significant changes with the advent of new types of engine, digital technology and autonomous vehicles, which are revolutionising companies’ business models and setting out new perspectives for developing countries.

### The massive deployment of electric vehicles is already launched

Emerging countries, and notoriously China, have targeted their automobile industries on electric engines. This has driven huge investments, lowering the cost of batteries and improving performance. As a result, economic and financial alignment with internal combustion engine technology is now within reach. There is a real opportunity for a massive development of electric vehicles, provided that investment in electric grids and charging stations is forthcoming. To be sustainable, this roll-out would require a sound urban mobility policy that ensures a balanced sharing of public space, as well as access to mobility for all. The development of electric cars will not in itself solve the problem of traffic congestion or social exclusion. However, electric two- or three-wheelers and electric buses or shared electric cars offer new perspectives for sustainable mobility policy, as long as the decarbonisation of electricity mixes continues.

**THE ELECTRIC REVOLUTION IS HAILING FROM THE SOUTH** As the market is counting on a worldwide yearly production of 100 million cars, by 2030 one in two vehicles sold is anticipated to be either hybrid or 100% electric. With nearly US\$90 billion of investment in electric mobility by 2022, this revolution is mainly happening in the South: India and China have announced a ban on the sale of internal combustion engine vehicles by 2030 and 2040 respectively. For China, the largest market and home to the Chinese firm BYD, the world’s leading electric bus manufacturer, this is an opportunity to develop its own industry in a sector that still has room for newcomers; and to promote new mobility behaviours, particularly in countries where the number of vehicles per capita is still low. Broadening the analysis to global sales of electric bikes (e-bikes), an additional 35 million units were sold in 2016 alone, 90% of which were in China.



## The new digital technology players

Drawing on digital tools, new players (Internet giants, telecom operators, data aggregators, power providers, etc.) have started to innovate in a sector that was traditionally off-limits being highly capital-intensive and highly technical. The new investors are now start-ups that are emerging as transport or logistics providers. These “innovators” will be increasingly located in the developing and emerging countries (Didi, Ola, 99, GrabTaxi, etc.), regions where mobility needs, more so than elsewhere, require new solutions that are effective, affordable and rapidly actionable.

## The shift to “mobility as a service” and autonomous vehicles

The other on-going major technological revolution is the autonomous vehicle, now being tested industrially. All of these technological developments blur the boundaries between individual and collective transport, and more importantly, the correlation between vehicle ownership and usage. These changes are leading to the emerging concept of “**mobility as a service**” (MaaS) which, when combined with appropriate public governance and investment, could bring about a reduction in ‘solo driving’ behaviours (single car occupancy) – still dominant today. In the MaaS approach, the mix of public and private mobility services provided to users for their immediate needs is more important than the transport modes and the ownership of vehicles.

## New mobility systems between mass transit and flexibility

As a result, two very different and complementary economic models for mobility will coexist. The first model is the historical one which has so far prevailed and relies on concentrated flows and economies of scale, as well as on specialising, rationalising and hierarchising transport modes. This is still the approach taken by traditional passenger and freight transport operators. The second model is very loosely organised and depends on digital tools and prioritises flexible solutions which require very little capital and which are easily rolled out on a large scale. These new mobility services often make use of existing infrastructure and vehicles to gain a higher level of productivity of assets by optimising residuary capacity.

## A mobility model being invented in the South

Mobility systems in countries from the South will follow a different from the one experienced by Western countries - where car-based urban planning of the 1970s has been replaced by people-based investment planning. This is particularly the case for cities, where the natural trend would probably lead to a mix of mass transport and paratransit transport. This offers an interesting case of ‘reverse innovation’ (South to North) as there are real similarities between the highly decentralised and intermediated economic models based on new digital mobility platforms (UberPool, Blabacar, etc.) and the paratransit models dominant in the South.

## The challenges of big data for public mobility policies

Given the rapid digital transition of the sector, a major challenge for decision-makers in developing countries is to be able to make the best use of the massive mass of mobility data collected – thanks to the widespread use of affordable connected tools (mobile phones, smartphone, etc.). If these data can be used, they can enhance knowledge on flows, which would help plan infrastructure more effectively and provide actual real-time services. These data may also have an economic value. The challenge then becomes: who captures the resulting value-added, and how can it be actually used for transport policies serving the general interest?



Kochi, India

## II. THE FRENCH COMMITMENT TO SUSTAINABLE MOBILITY WORLDWIDE

### A. A stronger international agenda

AFD Group is the sector's second-largest bilateral funder behind Japanese cooperation, and is already deeply committed alongside other international donors, be they multilateral, European or bilateral donors operating at regional or global scale. As their strategies are now converging – especially as the multilaterals have set a new priority on urban mobility (earlier funding had mostly targeted intercity road programmes) –, donors now need to coordinate their actions with increasingly well-organised newcomers: city networks, private actors, civil society organisations.



Bringing together public and private actors, the SUM4all (Sustainable Mobility for All) initiative, whose secretariat is provided by the World Bank, aims to develop a common view and common strategies to achieve SDGs.



AFD is a founding member of the MobiliseYourCity partnership for low-carbon urban mobility launched at the Paris COP21 along with multiple partners.



AFD is also member of the SloCat partnership for low-carbon mobility.

## **B. Mobility, a vector of institutional and economic influence for France and Europe**

### **AFD builds substantially on the French and European expertise**

French and European expertise covers all dimensions of a project: project engineering and management, civil engineering, supply of equipment and systems, as well as rolling stock, ships or aircraft. It is not limited to construction or the provision of goods and services but also involves operation and maintenance, governance, financial sustainability, innovative contractual modalities and risk management. French and European players bring value, know-how, experience and financial soundness to all of those areas. They are recognized as partners of choice for large-scale transport projects. The reputation of the French mobility ecosystem indirectly helps to enhance the visibility of AFD's untied-aid activity in the sector, and vice versa.

### **Strengthen technical assistance and peer-to-peer exchanges for mobility**

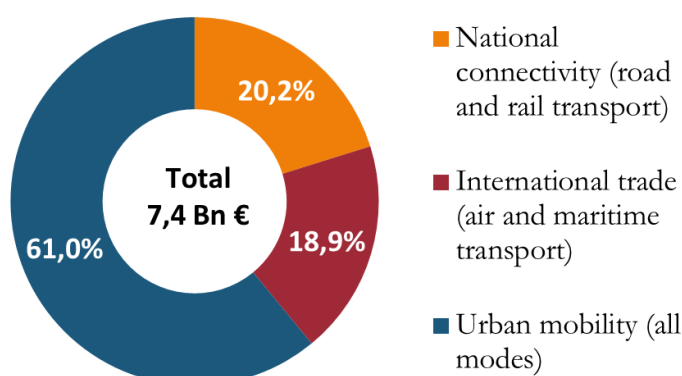
With the FEXTEs (Fonds d'expertise technique et d'échanges d'expériences – Fund for Technical Expertise and Experience Sharing) created in 2013, AFD has mobilised a large number of French and European public and private players to support its projects and develop the capacities of local partners. Several partnership agreements have been signed (with transports authorities from Ile-de-France or the urban agglomeration of Lyon), Orange, RATP Cooperation, Grands Ports Maritimes, etc.) in order to take advantage of French expertise. These cooperation initiatives generally include training activities, study tours and peer-to-peer exchanges on areas such as governance, the role of transport authorities, tariff-setting, intermodality, optimisation of operation, etc. Moreover, under various common initiatives, AFD is partnering the international commitment of many civil society organisations and public agencies active in the sector (CEREMA, CODATU, IFSTTAR, ADEME...). AFD's close cooperation with Expertise France, set to kick off in 2019, should enable AFD Group to continue and strengthen its role of platform serving French cooperation in the field of mobility.

## **C. Financial commitments by AFD Group in the mobility and transport sector**

Over the period 2012–2017, AFD Group approved financing worth €7.4 billion for transport and mobility projects, equivalent to a yearly average of €1.2 billion (between 10 and 15% of the total commitments by AFD Group).

## Urban transport represents over half of AFD Group's operations in the transport sector

**AFD Group Transport commitments (2012-2017) along territorial scales**



The heavy impact of urban transport results from the combined effects of the fast-growing populations in urban areas, AFD's expanded mandate to include large emerging countries, and the financing required for the very large-scale projects in capital cities. The importance of urban transport has led to increasingly diversified modalities of intervention in the sector (energy-savings, power supply, urban road networks, etc.). Also, projects did not used to systematically integrate the "gender" dimension – and this has now become part of the accountability framework criteria.

## Over this same 2012–2017 period, 63% of commitments in the transport sector had "Climate" co-benefits

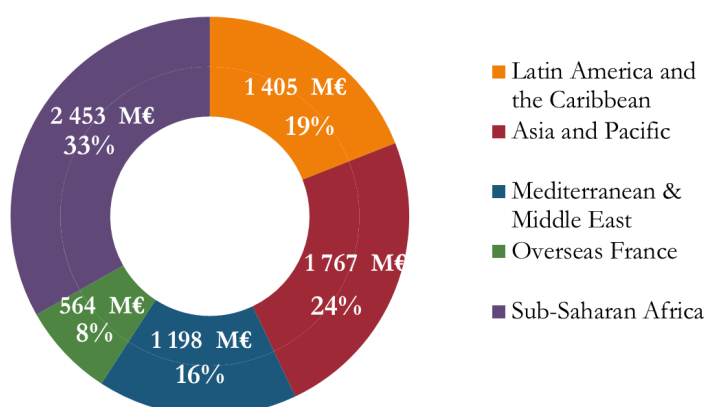
AFD has bolstered its action for climate by giving priority to financing low-carbon transport, which thus helps to mitigate GHG emissions. This is prevalent in the case of urban public transport projects, which account for almost one third of AFD's mitigation commitments, all sectors combined. However, it has so far been challenging to precisely monitor the extent to which projects contribute to climate resilience.

## The growing importance of private and public non-sovereign players

AFD Group operations in the mobility sector mainly take the form of sovereign lending provided to States (60% of commitments). However, the share of non-sovereign loans or loans to the private sector via Proparco, the private-sector financing subsidiary of AFD Group has nonetheless increased to reach 30% of AFD Group's total commitments in the transport sector.

## Africa, the main beneficiary of AFD Group interventions in the transport sector

**Geographical distribution of AFD Group Transport commitments (2012-2017)**



Sub-Saharan Africa has been recipient to one-third of the financing allocated over the period (€2.5bn). Most of the Agency's operations involve road transport projects (intercity roads, engineering structures, rural roads and tracks, urban roads and motorways), and projects for regional integration (ports and airports). The trend is nonetheless to develop more urban mobility projects particularly in Africa's major cities.



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Brasilia, Brasil

## III. THE SECTORAL GOALS FOR AFD GROUP OPERATIONS IN THE TRANSPORT SECTOR

The directions proposed in this sectoral intervention framework draw on the lessons learned from the AFD Group operations over the past ten years and the sectoral dialogue with our partners worldwide, both from developing and developed countries. They aim to better respond to the challenges of inclusion (greater access), the fight against climate change (the sector's energy transition), and integration of the opportunities offered by digital technologies. In doing so, these directions provide a sectoral focus of the main commitments of the AFD Group 2018–2022 Strategy and the territorial and ecological transition strategy.

### The 5 commitments of the AFD Group 2018–2022 Strategy

1. **Become the first “100% Paris Agreement” development agency** with all of its financing systematically compliant with low-carbon and resilient trajectories,
2. **Ensure that its activity is “100% Social Link”**, with actions that help reduce inequalities and strengthen the social link,
3. **Promote “3D development” approach**: development–diplomacy–defence in crisis-ridden or fragile regions, notably in the Sahel and Middle East,
4. **Prioritise non-sovereign financial solutions** and enable the involvement of local non-state or private-sector actors in the field;
5. **Adopt a “partnership-by-design” approach** to encourage innovative solutions, pool human and financial resources, and strengthen French and European influence.

## Strategy for AFD's territorial and ecological transition: The “territory” as the relevant scale for analysis and intervention

AFD's strategy to support the territorial and ecological transition is grounded on a concept of “territory” not only as a geographic entity, but also as a political, economic and cultural entity.

Supporting the “transition” of territories means analysing strengths and weaknesses on a case-by-case basis in order to:

- o Improve living conditions for all and promote a harmonious co-existence, equitable access to basic services, and the “quality of life” in the city,
- o Enhance the connectivity and attractiveness of territories: secondary cities, transport infrastructure and structuring of agricultural and agri-food chains,
- o Promote resilient territories: sustainable methods for agricultural production, fight against the degradation of ecosystems and biodiversity, reduction of cities' ecological footprints.

## A. Four sectoral goals to build sustainable mobility system for all

The international community has recently reached agreement on four main goals to be targeted when defining mobility systems: inclusive, green and low-carbon, effective and efficient and, lastly, safe for all. Each of these sectoral goals is in itself multi-dimensional, as this section will explain.



# 1. Inclusive mobility systems

Mobility can generate strong social link, on several fronts:

## o Inclusion of enclaved areas (equity and territorial cohesion)

Mobility systems, for goods and people, make it possible to connect territories and communities through a network of infrastructure and services. This principle applies to various spatial scales by integrating informal settlements in the city (travel distances for the poorest usually increases as the city grows); rural areas and secondary development centres at the national scale; and remote or landlocked regions into international trade.

## o Inclusion of the most vulnerable (service access for all)

Mobility systems must be accessible to all, especially to women and the most vulnerable (the elderly, disabled people). This involves adapting facilities (physical accessibility), but also providing a service adapted to many types of usage.

## o Financial inclusion of the poorest (affordable fares)

Mobility systems must be affordable for all. The share of transport-related expenditure in a household's budget is significant in countries in the South and, in the case of Africa's poorest people, represents between 15 and 20% of household income.<sup>(1)</sup> This involves not only rethinking the fare structure, social policies and targeted subsidies, but also changing the ways in which transport operators function and are remunerated, or even introducing cross-subsidisation between individual and collective transport modes.

## o Inclusion of civil society and users in project design (participation and consultation)

The planning and design of mobility infrastructure and services involve the active participation of the different stakeholders (users, neighbouring communities, private or public operators, employers, planners). It ensures right from the beginning that users' needs are factored in and any negative impacts are anticipated, minimized or mitigated when it comes to involuntary resettlement – transport infrastructure often requires expropriations.

# 2. Green and low-carbon mobility systems

Transport projects, like all AFD projects, must take into account environmental issues such as the protection of biodiversity and ecologically valuable areas, water quality, noise, etc. Moreover, AFD's new Climate strategy, approved in 2017, involves a contextualised analysis of each project to assess the extent to which it contributes to a low-carbon and resilient development pathway for the country in question. For the transport sector, three dimensions will be systematically covered: minimisation of environmental impacts; decarbonisation and alignment with a low-carbon development trajectories; and incorporation of adaptation and resilience to climate change.

(1) Diaz Olvera L., Plat D. Pochet P. (2008): *Household transport expenditure in Sub-Saharan Africa*.

## o Minimize the environmental impacts

Transport infrastructures, whether linear (roads, rail...) or non-linear (terminals) have by nature significant impacts on the surrounding environment (biodiversity, water quality, integration into the landscape, noise, air pollution) which need to be evaluated, minimized at the design stage, and reduced or offset according to international best practice. AFD intends to set the example and encourage its partners to systematically adopt environmental good practice to protect natural habitats and biodiversity. It will also develop actions on air quality, particularly in cities in emerging countries.

### Air quality, a growing concern

Each year, more than four million deaths are attributed to outdoor air pollution. Ninety-five per cent of the world's urban population lives in areas where ambient air quality is below the levels recommended by the World Health Organization (WHO). These figures are on the rise: Asian mega-cities are being asphyxiated; African capital cities (Cairo, Lagos, Niamey) and also Latin American capital cities, wind-blown mineral dust is causing a significant rise in the level of fine particles. Studies carried out across the globe report the effects of pollution on human health. As a result, reducing the exposure to atmospheric pollution is one of the targets of SDG 3 on health. Transport is one of the polluting sectors, along with urban heating, cooking and agricultural and urban waste management.

A strategy to improve air quality needs to be four-fold: i) actions to raise social and political awareness and strengthen the capacities of public authorities and civil society; ii) actions to improve knowledge and inform the general public: measurement networks, emissions monitoring and modelling; iii) action plans and implementation of multi-sectoral investments; and iv) impact evaluations.

ZOOM

## o Support low-carbon trajectories

The Avoid-Shift-Improve-Enable framework presented above (in I.B) lists the different possible actions on three timescales: in the long term, the purpose is to plan the shape and structure of cities and territories on a broader scale in order to optimise the movement of goods and people; in the medium term, it is a matter of driving the shift towards low-carbon systems (more public transport, promotion of walking and cycling, priority given to rail or waterborne freight); and, in the shorter term, improving the energy efficiency of vehicles and fuel – above all, the promotion of electric vehicles and other types of decarbonised power. Formulating a national low-carbon mobility strategy is a key success factor and will be supported by AFD Group.

## o Incorporate the climate change “adaptation and resilience” dimension

Climate change will increase the frequency and intensity of extreme weather events and flooding; and accelerate the rise of sea levels. These salient issues need to be factored into the design of climate-proofed infrastructure, whether it be rural tracks or roads, ports, coastal roads, etc. In the meantime it remains equally important that projects do not worsen the consequences of climate change (for example, modifications of catchment basins that increase the risk of flooding).

### 3. Efficient, effective and sustainable mobility systems

AFD Group will incorporate the following critical elements, for better project effectiveness and sustainability:

#### o **Quality of governance**

The quality of the institutional framework is a key element to ensure: (i) effective planning, (ii) a sustainable financing system that adequately combines diverse financial resources (fare-box revenues, user charges earmarked for maintenance, investment and operating subsidies, private capital, etc.) to ensure the longevity of the service with adequate maintenance; (iii) efficient governance, with an effective distribution of roles between the public and private sectors; and (iv) the appropriate regulation of transport services to ensure the prerogatives of public service and incentivise the operators' efficiency. Too often (and this is particularly true for urban mobility), there is an overlap or spread of responsibility between several public entities. Having a clear-cut governance framework is a starting point for the effective design and implementation of projects.

#### o **Relevance of technical choices**

The choice and sizing of a transport system need to meet travel demands and long-term needs which have been assessed in a documented, reasonable, argued and shared manner through planning studies. Transport projects sometimes tend to be over-sized, which compromises their sustainability. AFD Group ambitions to prioritise efficient solutions, resulting from the best compromise between capacity, scalability and capital and operating costs. This requires sound technical choices, as well as mainstreaming multimodal integration to respond to mobility needs of end-to-end travel and ensure the overall effectiveness of the transport chain (particularly for freight).

#### o **Sustainability of operation and maintenance**

As part of good governance, the technical and financial capacity to ensure the operation and maintenance of infrastructure is key to ensuring its longevity.

#### o **Leverage on territories' local economies**

As transport infrastructure does not necessarily entail financial profitability, the decision to invest public resources is justified by positive socio-economics impacts and effects within a project's area: creation of local jobs, enhanced attractiveness, leverage on the economy notably through reduced production costs; mitigation of negative externalities of individual motorized transport (congestion, pollution). A sound and robust socio-economic assessment must be a requisite for AFD's interventions.

#### o **Capacity strengthening**

Building up stakeholders' capacities is crucial for developing a strategy, prioritising investments, designing and running projects smoothly. This aspect must be assessed upstream and AFD Group can then provide capacity development support to its partners. This support may take the form of strategic studies (governance, financing, planning), management tools (financial models, tools for managing assets), resident or on-demand expertise on specific subjects (operational optimisation, "gender" approach, environmental management, etc.) or peer-to-peer exchanges via workshops and study trips.

## 4. Safe and secure mobility systems for all

Safety and security of people, traffic movements or vehicles must be central to projects, from upstream design to operationalisation. Different aspects are involved depending on the transport mode.

### o Security and safety of complex transport systems (rail, airports and ports)

This relates to systems and equipment design (signalling, communications, radars, etc.), procedures implementation and enforcement (including controls) and, of course, staff training. This area benefits from investment and capacity building programs. It encompasses early-warning situations due to extreme climate.

### o Road safety

Road safety must be systematically embedded in road projects, particularly for urban areas combining density, proximity to residential areas, and need for pedestrian accessibility. It requires knowledge about accident data (reliable long-run data sets). Thereafter, it is a matter of technical design (including planning for public spaces, notably pavements), vehicle fleet inspections, and awareness-raising programmes for the public. In fact, road safety relates to the individual behaviour of all drivers and pedestrians. Lastly, enforcement of laws and regulations requires a strong and sustained political will.

### o Fighting insecurity and gender-based violence in transport and public spaces

Today, the constraints affecting women's travel are often unacceptable. Women are subject to provocation, harassment and violence in public transport and streets all over the world, particularly at off-peak hour, with fewer people around and particularly in poorly designed and dark spaces. Combatting this violence is a priority for all AFD projects in the sector.

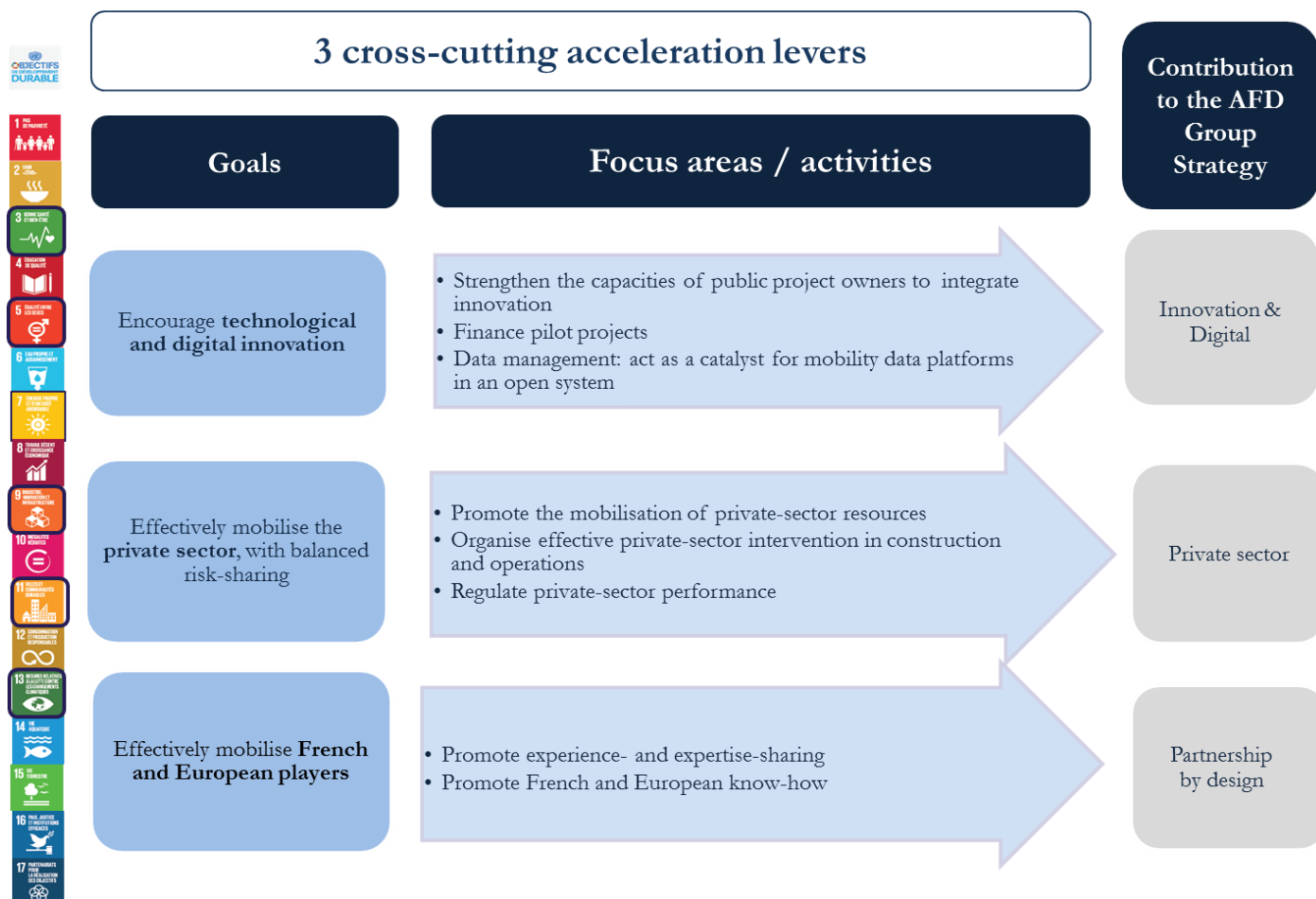
#### Transport projects with a “Gender” dimension

The AFD Group “Gender” strategy to adopt designs and implementation of all its projects to ensure that they, at the very least, “do no harm”, especially when it comes to large-scale construction sites that rely on a male workforce (e.g., the fight against prostitution and sexually transmissible diseases). Projects will contribute to reduce gender inequalities, particularly when it comes to urban mobility projects. The Mombasa Port project, for instance, integrated a gender equality strategy and showed that this approach can be mainstreamed and help drive societal change. AFD Group has developed a gender “tool box” for transport projects.

ZOOM

## B. Three cross-cutting acceleration levers

As a complement to the sectoral goals, and consistent with the AFD Group 2018–2022 Strategy, three acceleration levers are proposed to serve as cross-cutting “methodology” objectives .

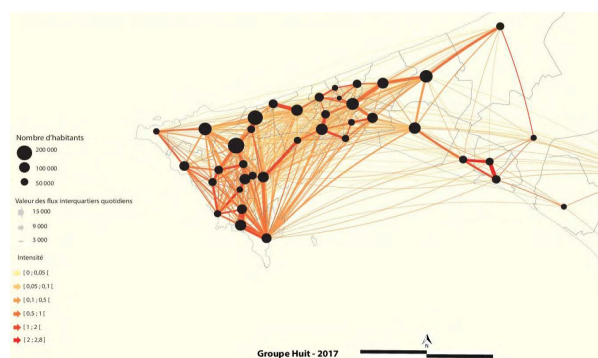


### 1. Promote technological and digital innovation

#### o Strengthen the capacity of authorities to integrate innovation into their strategy

The constraints of public procurement and the contracting authorities’ prudent risk management rarely allow for innovation in the design of transport infrastructure financed by the public sector. AFD Group will assist authorities in determining an approach towards the growing number of innovative initiatives, the use of data, measures for data protection and privacy, and in seeking the general interest and public service.

In Dakar (Senegal), AFD in partnership with Orange supports the local transport authority, CETUD, in analyzing households’ transport demand using mobile telephone data (and comparison with traditional surveys)



## o Factor innovation into our projects

In the coming decades, mobility will be electric and digital. It will depend heavily on the reliability of countries' telecom infrastructures and power supply systems. AFD Group will work to promote innovation at all levels: innovations to improve the energy efficiency of transport as well as alternatives to fossil fuels for vehicle traction (solar-, hydrogen-, gas-, hybrid- or wind-powered electric vehicles); digital innovations to optimise residual capacities (infrastructure- or vehicle-sharing), new mobility services, passenger information, intelligent network management, payment methods, safety; innovation in smart vehicles (self-drive cars, urban drones, etc.); and lastly, innovations in project development methods: participatory design, the use of brownfield or construction sites to host innovative urban initiatives, etc.

## o Finance innovative pilot projects in the South

AFD Group will act as an incubator and financier for innovative pilot projects with high risks and also strong potential for sustainable development. This approach will enable AFD Group to support the energy and digital revolutions in developing countries. AFD Group will spur the emergence of new solutions by organising hackathons and calls for projects, and by working with local or French innovation ecosystems; it will also promote 'reverse innovation' (enabling countries from the North to benefit from innovations developed in the South). For example, the development of shared light vehicles with alternative types of engines, local charging stations for electric vehicles (off-grid/solar), digital and mapping applications for informal transport networks (minibus, motorcycle-taxis, etc.) are among the applications being considered.



In Accra (Ghana), AFD Group has funded the mapping of paratransit services (tro-tros) and opened the data to enable developers to propose innovative applications

## o Promote open data platforms

Today, the growing mass of digital data accumulated through the increasingly widespread use of geo-referenced smartphones, intelligent transport systems and traffic management applications enables the optimisation of transport networks and improvement of service productivity. Managing these data is a key challenge. AFD Group will ensure as far as possible open access to data. It will aim to make all the data collected during project preparation freely available on open platforms in standard formats. These data can then be used for i) mobility planning, including accessibility analyses and impact evaluations; ii) regulation of private transport operators (self-regulation or regulation by public authorities by restructuring lines, granting licence quotas, adapting transport stops, etc.); and finally iii) improvement of information and service for users.

## 2. Mobilise the private sector effectively, with balanced risk-sharing

Transport is a market-based industry in which the private sector is largely involved. Worldwide, infrastructure design and construction, the supply of vehicles, systems and equipment, and the operation of global and local freight transport fleets are all mainly ensured by private companies – which are sometimes the successors of the traditional public operators.

The transport sector suits all forms of public-private partnerships (PPP), from full concessions to delegated management models. A distinction is often made between infrastructure management (which may involve a natural monopoly, as it is capital-intensive and leads to scale economies) and the operating of transport services (which is seen as more competitive). The different mobility sub-sectors nonetheless present very contrasted models of profitability depending on whether natural monopolies and public service obligations exist and on the users' ability to pay. For instance, whereas operating a port terminal may seem very financially profitable, maintaining secondary roads or operating an urban public transport network is usually loss-making. Possible private-sector participation in the financing will vary greatly depending on the transport mode involved and the project's economic equilibrium. PPP models are still often chosen for the construction of major infrastructure, as they allow for effective risk-sharing between the public and private sectors, and help optimise the design–construction–operation phase when the private partner integrates all of these tasks.

Although transport policies vary over time and by country, they generally recognize that private-sector participation should meet two objectives: (i) increase productivity in the operation of transport services, and (ii) contribute to the massive needs for infrastructure financing. Today, mobility-related innovation can be viewed as a third objective. AFD Group aims – and this is one of the focuses of its 2018–2022 Strategy – to prioritise non-sovereign financial solutions allowing for private-sector intervention at the grassroots level. As a result, AFD Group will work in the mobility sector to:

### o **Promote compliance with best practice in PPP structuring**

It is important to support the project sponsor, at an early stage, in choosing the type of private-sector participation that best suits the risks incurred (construction risks, but above all, traffic-related and revenue risks) and the project's economics, which vary widely in transport projects. The role of AFD Group (often alongside international donors) is thus to assist project sponsors in structuring projects to secure the different stakeholders, promote long-term and balanced contract management, and maximise performance.

### o **Foster the mobilisation of private financing for infrastructure**

By promoting good practice in setting up legal and financial arrangements, and by calling on new tools that guarantee public payment to “de-risk” PPP agreements, AFD Group ambitions to create a leverage effect by mobilising and catalysing the financing of its private-sector partners (banks, investors, markets) for large-scale infrastructure projects.

### o **Propose incentivising solutions for greater energy efficiency for vehicles**

Private investment is crucial to “green” road vehicles (personal cars, motorbikes, taxis, minibuses, bus or truck fleets, etc.), and a prerequisite for the decarbonisation of the sector and improvement of air quality in large cities. Private owners need to be encouraged to invest in less polluting vehicles with reduced GHG emissions (electric, hybrid, or alternatively powered vehicles compliant with the Euro I to IV emission standards). In its operations, AFD Group will promote incentive regulatory and tax frameworks and propose innovative and tailored financial tools (“green” credit lines, guarantees, leasing schemes, etc.) to local financial operators.

## Projects in synergy with Proparco, the AFD Group private-sector financing subsidiary

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### Railways in Gabon

The rehabilitation of the Trans-Gabonais railway is managed by a private concessionaire, SETRAG, and co-financed by AFD and Proparco. Such synergy helped mobilise the private sector and secure the set-up of the project.

### Urban mobility in Colombia

In 2018, Proparco approved a loan to a private firm, SOTRAMAC, for the deployment of 222 natural-gas buses to upgrade urban transport in Cartagena (Colombia). A new integrated bus network, TransCaribe, based on a Bus Rapid Transit (BRT) corridor, replaced poorly coordinated and underperforming transport services formerly provided by small private operators. The new network provides a faster and less expensive service for users.

The project is structured around a protective concession agreement and draws on the experience from other BRT systems in place in Colombia. The new concessionaires must also contribute to recycling the old buses, compensate their owners and hire at least 50% of bus drivers from the old system.

In addition to AFD Group, the pool includes Colombian development banks and the main bus supplier.



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ZOOM

### 3. Promote the AFD Group “partnership-by-design” approach with French, European and international stakeholders

AFD now positions itself as a platform for the exchange and development of European and French know-how. In the mobility sector, French and European expertise is strong and internationally reputed, in fields such as institutional and legal frameworks, approaches to transport planning at different territorial scales, multimodal integration or eco-districts. The ‘partnership-by-design’ approach is based on three major objectives: (i) voice AFD Group positions within international groups to move forward major issues such as the climate and digital technologies; (ii) mobilise French or European expertise to provide peer-to-peer technical assistance to support investment projects; and (iii) identify reliable partners able to implement projects funded by AFD Group, notably through grants.

- o Voice AFD Group positions within international groups in order to move forward major cross-cutting issues such as the climate and the digital technologies agendas



Launched in 2015 at the COP21, the Partnership MobiliseYourCity supports better planning for urban mobility to set ambitious goals for reducing carbon footprints and measuring their results.











AFD Group is a founding member of the Partnership MobiliseYourCity (MYC), alongside development agencies, urban planning and mobility agencies, NGOs and other development banks (KfW, EBRD).



**LA FABRIQUE  
DES MOBILITÉS**





AFD's partnership with La Fabrique des Mobilités, an association linked to ADEME (French Agency for Energy Efficiency), is feeding into the initiative supported by AFD Group for digital commons and especially the mapping of informal transport networks.

## o Mobilise French and European expertise to provide peer-to-peer technical assistance to complement investment projects

AFD Group ambitions to back investment financing with a technical assistance (strategic studies, management tools, assistance to project sponsors, thematic workshops, key expertise, etc.), capacity building (training, workshops, peer-to-peer exchanges, online tools, etc.). This requires the participation of the private and public sector expertise, as well as professional and associative ecosystems, the research community and incubators. AFD's partnership with the association CODATU is strategic as it mobilises urban mobility specialists from local authorities that are members of CODATU. Mobility is a sector in which Expertise France is not yet greatly involved (except in some sovereign areas such as road or air safety). AFD will also directly mobilise its port partners (Port du Havre at Kribi in Cameroon; Port de Marseille at Dakar in Senegal) and airport partners (Aéroport de Lyon to support the Aéroport du Cameroun).

### Strategic partnership with the association CODATU



an association that has been actively promoting sustainable urban mobility in emerging and developing cities for nearly 40 years, CODATU is a partner for AFD Group. It implements several types of action: production and dissemination of knowledge to inform an international community of researchers and professionals; basic training and continuing education actions; development and dissemination of tools and methods; support to urban mobility authorities, mainly through French local authorities; and, lastly, advocacy at all levels. CODATU is conducting several AFD-funded technical cooperation initiatives in Tunisia, Brazil, Peru, India, etc.

ZOOM

## o Identify reliable partners able to directly implement projects

In the vision of an “AFD platform”, one of the objectives is to build a network of development actors who will engage with partners from the South, in their specific knowledge areas. These partners may be international associations such as the World Resources Institute (WRI) or the Institute for Transportation and Development Policy (ITDP), which undertake capacity-building actions, advocacy, studies or small-scale projects; non-governmental organisations active on areas such as air quality or road safety; or UN-related institutions (UN-Habitat, UNOPS). There is also a strong demand for long-term, peer-to-peer support mobilising French operators. Advice and assistance with operating complex urban or national rail systems is a field in which operators such as the SNCF, the RATP, Kéolis or Transdev could be mobilised, like in Cuba where the SNCF is supporting its Cuban counterpart, UFC, to establish a comprehensive strategy for rolling stock maintenance, from rehabilitation of the workshops to training sessions.



## PART TWO OPERATIONAL PLAN





Antananarivo, Madagascar

## IV. OPERATIONAL PLAN TAILORED TO DIFFERENT TERRITORIAL SCALES



The strategic goals defined above are pursued differently depending on the territorial scale and issues involved:

1. **The urban scale**, where the objective is to improve citizens' quality of life by developing clean and sustainable mobility for all;
2. **The national scale**, where projects need to respond to the challenges of territorial planning and the development of economic centres;
3. **The regional and international scale**, where projects need to contribute to integrating economies into international trade.

For each of these scales, AFD Group will focus on specific lines of action (described below), while ensuring global coherence. Under the heading “Going further”, some of these lines of action are illustrated by concrete actions that reflect the ambition to bring about changes and maximise the impact of operations.

# A. At the urban scale, promote liveable and inclusive cities

## 1. The issue: act on urban mobility systems undergoing radical transformation

### All of us will be urban soon... but is it liveable?

By 2050, 75% of the world's population will be living in an urban area. The United Nations forecasts that 92% of the 2.7 billion new city dwellers expected, or 70 million new city dwellers each year, will live in developing countries. The question for the South is to preserve, build or reclaim “liveable” cities in a context of rapid economic growth and increase of flows (people and goods). This applies to already-built megalopolises as well as fast expanding secondary cities in large emerging countries as well as the poorest countries.

### The expected explosion of pollutions and negative externalities

The negative externalities linked to city transit are now overwhelming: poor accessibility, which hinders social inclusion and induces social and economic losses, congested public spaces, degradation of air quality, poor road safety, CO<sub>2</sub> emissions. The current trend is automatically leading to a widespread increase of these adverse effects due to a combination of factors: (i) fast-growing urbanisation and ever-increasing urban sprawl, (ii) rising economy and wealth and related increased mobility, and (iii) an increasing car ownership. This trend is already prevalent in large emerging countries. In Beijing, the population has doubled in 20 years and the number of cars increased five-fold, jumping from 1 million in 1997 to 5 million in 2013. Without an alternative solution to “all-car” transport, new travel needs will simply generate the growth of motorised vehicle ownership – a trend that will be hard to reverse.

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### The cost of unsustainable urban mobility

#### Congestion



From 2 to 5% of world GDP

#### Air Pollution



4.2 million early deaths annually due to air pollution; 85% of these deaths are in the Global South

#### Inadequate road safety



1.3 million deaths annually and 20 to 50 million injured

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## The degradation of mobility conditions mostly affects the poorest

The vicious circle of unsustainable transport is all the more regrettable as it takes its toll primarily on the most vulnerable populations: the residents of informal neighbourhoods and isolated districts with poor facilities and services usually travel longer distances, become even more isolated, particularly in the event of extreme weather conditions, and spend a large share of their household budget on transport. Moreover, pedestrians – mostly women and children, who are less motorised – are the main victims of poor road safety.

## Invent a new mobility model for the South

In cities of the South, walking and public transport (based on underregulated private and paratransit services) are still predominant. In fact, this relative absence of motor vehicles represents an opportunity to build a new mobility model that can alleviate existing malfunctions (mainly in terms of access, effective functioning of the city, and carbon footprints) and a chance to overcome the structural deficit in urban infrastructure. This new model would differ from the classical, carbon-based models adopted in the North. However, the challenge is to redirect investment in developing cities towards more sustainable policies and especially towards transport systems that are more equitable in terms of space sharing and lower carbon-intensity. While substantial investment is required for this transition, the amount required remains lower than the economic, social and environmental cost that would occur by continuing the massive use of personal cars powered by internal combustion engines.

## A need to redirect investments to improve city travel

The extraordinarily rapid growth of cities in the South has not been followed by the “basic” infrastructure that structures the urban space such as roads and traffic management, water supply and sanitation systems, drainage, power supply, street lighting, etc. Road networks are often sparse and poorly interconnected; infrastructure for mass transit or parking is either inexistent or inadequate. The investment needed for transport infrastructure is estimated at between €1,400 and €2,100 billion a year to support the expected growth trajectories and achieve sustainable urban mobility. Meeting these needs should mobilise all financial sources – public and private, local, national and international – and will require the combined efforts of international donors whose action in the transport sector has until recently mainly focussed on financing roads.

## Converging objectives: fighting congestion and air pollution and achieving zero-carbon emissions

The solutions for sustainable and low-carbon mobility are widely known. For large cities, they rely above all on integrating transport planning and urban planning at all levels (street/district/city), in order to promote mixed land use urban development and density, which are directly related to the volume and average distance of trips. They should also allow for an equitable sharing of urban space for all users, with a greater place given to non-motorised modes (walking and cycling), and promote the shared use of low-emission cars, linked to technological innovation in electric vehicles. This should come along with quality mass transit systems serving major transport corridor and efficient physical and fare integration (intermodality). This combination of actions would help achieve **quasi carbon neutrality of transport in dense areas** – a prerequisite to the Paris Agreement. The consensus reached on these policies among stakeholders hangs on the fact that they help achieve the objective of providing accessibility and safety for all, reducing air pollution, mitigating congestion and creating carbon-neutral cities.

## The growing importance of cities from the South on the international stage

Tomorrow, cities will be the main drivers of change. Even though decentralisation is still not widespread, pressure from inhabitants means that solutions will emerge mainly at the local level. Large cities have organised themselves into associations (C40, ICLEI) in order to make their voices heard on the international stage and share good practice. The incentive frameworks proposed by the 2015 Paris Climate Agreement, the SDGs (Goal 11 on sustainable cities) and the New Urban Agenda (Habitat III) show that a broad international consensus exists on the importance of acting to promote more sustainable and low-carbon mobility policies. Many global initiatives (SUM4All, MYC, TUMI) are helping cities to share and implement “good practice”. Importantly, this should not be limited to large cities but also increasingly include secondary cities and regional capitals.

## 2. AFD’s operational strategy for urban mobility

So far, AFD Group has mainly focused on investing in mass transit systems (BRT, tramway, metro, commuter trains). The present operational framework proposes to continue this effort, which still responds to the main requests from large cities, and also provides more support to local and national urban mobility stakeholders in planning activities (Line of action 1); broaden AFD’s traditional scope of intervention to include vehicles, flow optimisation (traffic management) and non-motorised transport (Line of action 2). The AFD Group ambitions to better integrate transport and urban planning for better “quality of life”, with focus on the key “gender” dimension (Line of action 3). Special attention will be given to the paratransit sector (Line of action 4) so as to contribute to a real and profound transformation of urban mobility systems. Lastly, projects will aim to support innovation (Line of action 5).

### Key assumption: the roll-out of new financial tools

To implement projects consistent with the lines of action proposed here, AFD Group will diversify its financial tools beyond classical project loans, in order to (i) “scale up”, particularly by mobilising banks, and (ii) support all aspects of mobility policies (in addition to financing mass transit systems only).

- o Intervene at an earlier stage via study funds for project loans to improve project quality on the “social link”, environmental, gender and climate dimensions right from the project preparatory phase.
- o Continue and expand direct loans to local authorities.
- o Develop public policy loans (PPLs) to support governments or large cities’ policies in “decarbonising” urban transport.
- o Programme loans or results-based loans, backing concrete and realistic action plans to finance lighter infrastructure (pedestrian walkways, cycle paths, safe intersections).
- o Financial tools for fleet replacement: lines of credit, guarantees, revolving funds, etc.
- o The whole range of grants for technical cooperation, without excluding technical assistance and capacity building, financed from loans.
- o Urban innovation labs, with calls for projects associating civil society or innovation actors (start-ups, incubators).

## Urban mobility: promote liveable and inclusive cities

### Specific objectives

#### INCLUSIVE mobility systems

- Ensure an adequate service level for all, including in informal neighbourhoods and isolated districts, via adapted services
- Improve the quality and “walkability” of roads and promote a balanced sharing of public space
- Promote access to urban transport for women and vulnerable people
- Promote balanced fare policies

#### GREEN and LOW-CARBON mobility systems

- Support the development of clean and low-carbon modes (public transport, soft modes)
- Control the distance and number of city trips
- Promote the energy efficiency of PT and personal vehicles

#### EFFICIENT, EFFECTIVE and SUSTAINABLE mobility systems

- Support the formulation of comprehensive and integrated mobility policies/plans
- Promote adapted governance and financing schemes for urban mobility systems
- Support the operators’ modernisation, good management and productivity
- Optimise traffic and parking management
- Promote appropriate dimensioning, complementarity and modal integration of systems, to optimise networks

#### SAFE and SECURE mobility systems

- Promote road safety in cities (road networks, vehicles, behaviour...)
- Combat gender-based violence in urban transport

#### Promote technological and digital innovation

- Strengthen transport authorities’ capacity to integrate innovation and manage data
- Finance projects for electric mobility in cities
- Finance pilot projects for digital mobility solutions

#### Effectively mobilise the private sector

- Organise effective intervention by the private sector in building infrastructure and operating urban transport systems
- Encourage the private sector to invest in vehicle fleet renewals and digital mobility solutions

#### Effectively mobilise the French and European players

- Support peer-to-peer cooperation between transport authorities and French institutions
- Participate in international partnership-based initiatives (advocacy)
- Promote French know-how in urban transport

### Lines of action

1. Support the preparation and implementation of national and local public policies for sustainable mobility

PPL MYC  
FXT TA/CB

2. Finance all the components of a sustainable mobility policy (infrastructure, fleet modernisation traffic management, etc.)

PrL PL  
TA/CB FAPS

3. Use mobility to improve quality of life in urban areas (integration of transport–urban planning)

PPL PrL  
TA/CB MYC

4. Support the modernisation of paratransit, the main transport mode in the South

GAR CL  
TA/CB

5. Support innovation forwards digital and energy transformation of mobility services

LAB FXT  
TA/CB

### Financial tools to mobilise

Public policy/loans  
Project loans  
Programme loans/ Result-based loans  
Credit lines to financial institutions  
Guarantees

FXT FEXTE (Fund for technical expertise and experience transfer)  
TA/CB Technical assistance / Capacity building actions  
MYC Mobilise Your City partnership programmes  
FAPS Project preparation funds  
LAB Innovation labs / calls for projects / incubation / PoC

## LINE OF ACTION 1 — SUPPORT THE PREPARATION AND IMPLEMENTATION OF NATIONAL AND LOCAL PUBLIC POLICIES FOR SUSTAINABLE MOBILITY

To ensure that the projects proposed for AFD financing are more sustainable and more bankable, upstream support should be provided for governance framework and planning tools both at national and local levels. This encompasses **cooperation actions and technical assistance**, which aim to reinforce:

- o **Governance and financing schemes:** support in setting up urban transport authorities, which coordinate the action of diverse stakeholders across a broader territory (the urban area), or directly implement projects, with clear transfers of responsibilities; select suitable technical standards (vehicle emissions, fuels, resilience to climate extremes); explore and select financing schemes to secure funding for urban mobility (dedicated taxes, land value capture, access to “climate” financing, etc.); and define “digital” strategies for the transport sector. This usually requires national urban mobility policies setting out the framework for local authority initiatives.
- o **Integrated and participatory planning:** sustainable urban mobility plans (SUMP) developed in line with urban development plans. They should also embody a shared “vision” agreed with the different users, including the poorest residents, transport operators and companies. This requires considerable efforts to convince decision-makers and developing an ambitious vision grounded on economically viable projects.
- o **Training and capacity building for the stakeholders, including the professionalisation of private-sector operators:** continuing education or diploma courses, development of Massive Open Online Courses (MOOCs) designed for public authorities and private operators; peer-to-peer partnerships with French local authorities; plans to professionalise the private paratransit sector so as to include it in projects to modernise urban transport.

### GOING FURTHER

From projects to policies: AFD Group will support integrated and multimodal mobility policies through public policy loans

#### Partnerships and peer-to-peer exchanges – effective tools for capacity building

Experience-sharing among peers is a highly effective way of “changing the game” and rallying support from policymakers. This should be more integrated into training and capacity building programmes. To this end, AFD has built a network of professional partners, comprising leading French and international institutions such as CODATU (a CSO advocating for sustainable urban transport in the Global South), Céréma (Centre for Studies and Expertise on Risks, Environment, Mobility and Urban and Country Planning), ADEME, SLoCaT, and other French mobility authorities (Ile-de-France Mobilités, Grand Lyon...).

ZOOM

## LINE OF ACTION 2 — FINANCE ALL COMPONENTS OF A SUSTAINABLE MOBILITY POLICY

In recent years, financing for mass transit systems has accounted for a significant share of AFD's activity. To better meet the objectives of social inclusion, safety and the fight against air pollution and GHG emissions, AFD Group will broaden its scope of action and support all the components of sustainable mobility policy and mobilise new financial instruments such as public policy loans. The scope includes:

- o **High-capacity public transport and multimodal hubs:** today, this is the main entry point for donors and AFD Group will continue to support this highly capital-intensive segment, since financing its core business and the segment constitutes the backbone of urban mobility.
- o **Optimising existing bus services,** which currently account for the majority of public transport worldwide and are provided by private and unregulated operators (refer to Line of Action 4 on paratransit). This optimisation involves fleets renewals, bus stations and stops redeployment, lines restructuring to coordinate with mass transit and paratransit solutions and, most importantly, professionalisation of operators and sound management. This produces very rapid impacts in terms of access (mode offering the best spatial coverage); effectiveness (restructuring and reduction of congestion); safety (lower accident rates), and air pollution and GHG emissions (new vehicles adopting recent standards and scrapping of old highly polluting vehicles).
- o **Developing facilities for pedestrian and cyclists** (pavements, bike lanes, bike parks, pedestrian areas), so that non-motorised modes, which account for almost half of trips, enjoy easy and conditions – keeping in mind that in fact pedestrians are the main victims of road accidents in cities.

### Promoting walking, the main mode in African cities

In African cities, walking accounts for 50–80% of trips. Yet, walking is viewed as a constrained mode of travel – made for the poor, who have no other options. Few cities have developed a real strategy to promote non-motorised modes (walking and cycling) ensuring continuous, good-quality and safe routes. AFD Group will work to change mindsets and develop non-motorised modes, either to complement public transport projects (along corridors or around stops and stations), or through road and public space projects in smaller cities.

ZOOM

- o **Energy-efficiency or incentive programmes to develop electric mobility** (see the roadmap below): these more innovative initiatives will mobilise highly concessional financing so as to offset the extra costs of electric or hybrid buses or, at least, buses that produce fewer emissions; financing for pilot projects involving electric two- or three-wheelers; the deployment of charging stations for fleets of high-use vehicles (public vehicles, buses, taxis).

- o **Achieving optimal and safe traffic flows** – a wide range of tools is available: road improvements, traffic management and control (intelligent signalling systems, integrated traffic control centres, passenger information systems), urban tolls, speed limit zones, urban bypasses, development of intersections, parking policies. These measures are effective in improving traffic fluidity, reducing congestion and its related negative effects, while also improving safety. The concurrent deployment of adapted measures (more balanced sharing of the road space between modes, parking management, flow management) would help prevent further increases in car traffic.
- o **Urban logistics** is often neglected by urban planning, which is now focussed on passenger transport. The flows of urban logistics are rapidly increasing, and cities in the South will need to start to envisage limiting polluting and bulky vehicles in their city centres – for example, by developing logistics “hubs”.

These different components of a mobility policy require very varied levels of capital injection, both public and private, and involve sometimes complex arrangements for their institutional implementation. They may also depend on different actors and contracting authorities, which highlights the need for coordination and common governance. To respond to this, AFD Group will need to mobilise diverse financial tools by promoting “programmatic” approaches and public policy loans.

## GOING FURTHER

AFD Group will support and develop mobility improvement programmes in secondary cities, which are not necessarily based on mass transit systems

### BRT in Peshawar, a concentration of good practice

Peshawar’s bus rapid transit (BRT) system, which is due for commissioning by late 2019, includes a network of 8 BRT lines covering a total length of 80 km including a segregated 23km-long BRT corridor. The operation plan allows for bus routes going in and out of the right-of-way, allowing a larger spatial coverage of the city.

To limit the carbon footprint, the rolling stock uses diesel-electric hybrid technology. The project’s urban integration follows a “complete street approach” (façade-to-façade), in which all of the public space and road is fully redesigned and includes pedestrian facilities and bicycle lanes. It also comprises a bus industry transition plan for the informal sector (integration of small paratransit operators and fleet scrapping program) and a gender action plan. Co-financed by the Asian Development and AFD Group, this flagship project will benefit all of Peshawar’s residents and, more directly, 500,000 users each day.



ZOOM

## LINE OF ACTION 3 — USE MOBILITY TO IMPROVE QUALITY OF LIFE IN URBAN AREAS

Mobility enables the city and the city generates mobility. Integrating the two dimensions is key to ensuring sustainable urban development and a better quality of life for citizens. However, integration is not systematic due to different or even competing stakeholders' interests and governance systems. Through its action, AFD Group ambitions that:

- o **Urban transport planning** is integrated into comprehensive, long-term and coherent urban development by prioritising mixed land-use, density, compact districts and multi-polar urban planning based on a sustainable and resilient approach to the city (Line of action 1).
- o **Mass transit systems cover major existing and planned urban centers, combined with a densification along transport corridors and multimodal hubs** (Transit-Oriented Development – TOD). Combined with an appropriate land-use policy, public transport is one of the tools to limit urban sprawl. Mixed projects combining the renovation of a district and new transport services illustrate this approach and will be encouraged when relevant and feasible.
- o **Transport systems are well integrated into the urban fabric, at major multimodal hubs and also at each station/stop**, by promoting light targeted solutions (“quick wins”) for the latter so as to enhance public spaces and accessibility to stations. AFD Group will seek to support the development of multimodal terminals, which responds to functional transport needs and also offers interesting prospects of financial structuring for promoting commercial spaces through public-private partnerships.
- o **The share of public space is balanced between road pavement, segregated public transport lanes, bicycle lanes, pedestrian areas and green spaces (parks, markets...)**, and integrating road safety issues to ensure safe pedestrian and motorised flows.
- o **Transport is included in the formulation of an integrated policy to improve air quality**, which will include measurement and modelling systems and a sector-wise action plan (industry, heating, fuel and transport, waste, etc.).



### GOING FURTHER

AFD Group will work to develop “flagship” projects with sound Transport–Urban Planning integration: development of a interchange and the surrounding district, urban developments linked to a new public transport corridor, etc.

ZOOM



© Casa Transports

## United Nations Square in Casablanca: the tramway brings in urban renewal

Inaugurated in 2012 and co-financed by AFD Group, Line 1 of Casablanca's tramway provided the opportunity for an in-depth renewal of the public spaces along its corridor. An emblematic illustration of it is certainly the complete redevelopment of United Nations Square, at the gateways of the old Medina and the Art-Deco city centre. Formerly a huge road intersection, 80% of the square has been turned into a pedestrian area around a large (and very busy) esplanade, and a multimodal hub (bus, collective taxis and tramway, for which United Nations Square station is the busiest on the network).

## Mainstream actions to promote women's safe and equal access to mobility services

Often non-motorised, women are likely to benefit the most from public transport. Today, however, their use of urban transport is often problematic for women. To promote women's access to transport services, the "gender" dimension will be reinforced in three ways:

- o **Better physical access** (ramps, escalators) to transport systems for women with young children – which will also benefit temporarily or permanently disabled people.
- o **Fight against gender-based harassment and violence in urban transport.** Special attention will be given to station design, with better lighting for walkways both inside and outside stations, awareness-raising campaigns, provision of alert systems and the presence of staff trained on gender issues and, when possible, female staff in vehicles and stations.
- o **Priority access to jobs created in the transport sector:** targeted training programmes for women drivers, operation or maintenance staff, and awareness-raising for employers.

ZOOM

## LINE OF ACTION 4 — SUPPORT THE MODERNISATION OF PARATRANSIT, THE MAIN TRANSPORT MODE IN THE SOUTH

In most cities in the South, public transport depends primarily on private paratransit providing buses and minibuses services. They seldom operate outside the law as they generally hold a licence to run a route or service, but the levels of service, comfort and safety are poor: fierce competition to pick up passengers, chaotic and accident-prone driving, lack of fixed timetable or stops, and old, polluting and uncomfortable vehicles. Although this sector is often criticised for the nuisances it incurs, it nonetheless offers a flexible and generally affordable service at zero cost for the authorities. It also generate permanent jobs. The paratransit sector has expanded significantly as public bus companies – or so-called “institutional” transport modes – tend to decline due to the increasing scarcity of subsidies and sub-optimal management.

Today, the transition of the paratransit sector towards a more professional transport system is key for sustainable mobility in cities of the South. This in no way implies dismantling paratransit, but rather reducing its negative impacts and integrating it into more structured mobility projects or strategies. This industry transition requires acquiring a sound understanding of each stakeholder’s institutional and financial rationales in order to propose tailored and acceptable solutions. The industry transition plan should be implemented in several stages:

- o **Rationalise transport corridors and improve the administrative management of the paratransit sector**, with transparent licence-issuing mechanisms based on an analysis of the network (density, complementarity with other modes); and also with minimum specifications and simplified administrative procedures.
- o **Professionalise and structure the sector** around associations or cooperatives (training, formalisation, merging and groupings, timetabling, pooling, maintenance upgrading, financial management).
- o **Ensure greater involvement and inclusion** in mass-transit projects (decisions on the trunk and feeder structure of the service, training, etc.).
- o **Build infrastructure and light structures** (stops, depots and their access) to reduce travel costs, delays and congestion.
- o **Implement financial incentives** for fleet renewal with measures such as a “scrapping bonus” and attractive financing from local banks.
- o **Develop digital tools** to support all these measures, so as to better market the network, services, transfers, and optimise vehicle occupancy rates.

### GOING FURTHER

AFD will develop tailored financial tools for modernisation of the paratransit sector



## LINE OF ACTION 5 — SUPPORT INNOVATION TOWARDS DIGITAL AND ENERGY TRANSFORMATION OF MOBILITY SERVICES

The major conventional actors in the transport sector (public authorities, operators, large industries) often struggle to drive innovation in the area of mobility. Generally, this is spearheaded by the private sector (especially “newcomers”) or associations, which are less constrained and more flexible. It is also driven by the users themselves, who adapt their practices on daily basis depending on new services available... Yet, now that the concept of “uberisation” is under the spotlight of public debate, does innovation always correspond to the general interest, stronger social ties and the low-carbon transition? To move beyond this dichotomy, authorities must be able to set policy directions, or impose regulations. The private sector can also be incentivised or helped to develop innovative, virtuous and sustainable solutions. All of this can be encouraged by a more “open” technological and institutional environment and by financial incentives for pilot initiatives. AFD Group ambitions to become a facilitator of innovation supporting sustainable mobility; it will specifically focus on two areas: the digital transformation of transport and the widespread use of low-carbon vehicles (such as electric vehicles) in the city. To achieve this AFD Group intends to:

- o **Support public actors in South in defining their own digital or energy strategy for urban mobility** by associating local and/or French innovation ecosystems.
- o **Launch and finance calls for innovative mobility projects** to drive the new thinking, study their feasibility, launch pilot projects or “proof-of-concept”. The paratransit transition (Line of action 4) will be given priority. The civil society will be mobilised to foster new and participatory models.
- o **Facilitate the creation of mobility data platforms**, with open access (open data) managed and enriched collaboratively. These platforms could support future smartphone applications or other digital solutions to help improve urban mobility practices; they also offer a large amount of information to be exploited for mobility planning and for optimising the operations of public and private operators. The *Digital Transport 4 Africa* resource centre is a precursor of this type of platform.



### GOING FURTHER

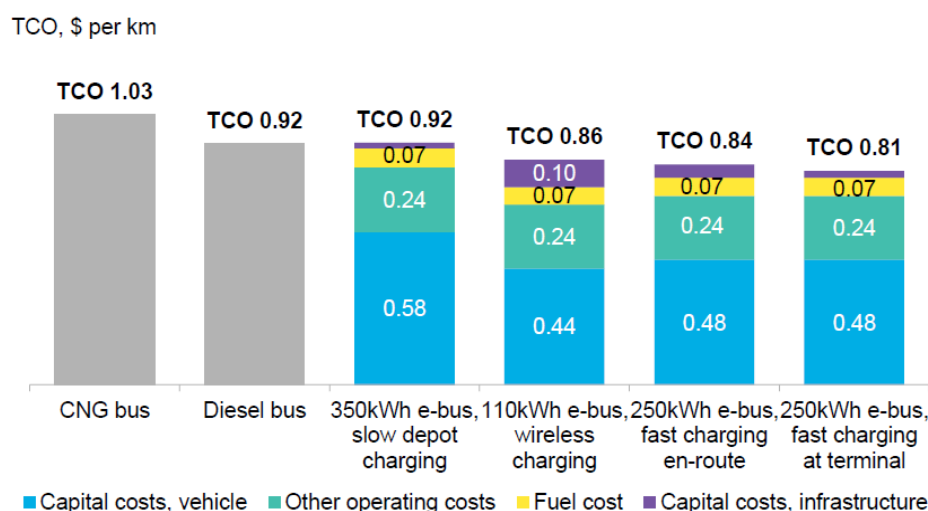
AFD Group will proactively develop “pilot” electric mobility projects involving light and heavy use vehicles

## ZOOM

## AFD Group's roadmap to accelerate the deployment of electric mobility

In 2010, the number of light vehicles in circulation had hit the 1 billion mark. To achieve the objectives of decarbonisation of the transport sector, the average well-to-wheel (WtW) emissions of vehicle fleets worldwide will need to be divided by 4 or 5 by 2040–2050, to reach 50 g CO<sub>2</sub>/km WtW. This target can only be met by mainstreaming electric vehicles, together with a real decarbonisation of electricity mixes. This is highly ambitious (electric vehicles accounted for no more than 4% of the global vehicle fleet in 2018). Inconceivable five years ago, it now seems feasible thanks to the very rapid decrease in battery prices. In 2017 alone, nearly 1.1 million rechargeable electric or hybrid vehicles were sold (i.e. 57% growth compared to 2016) – over half of the sales are in China, which today is home to 40% of the world's electric vehicle fleet. Many countries (China, India or France) plan to ban 100% internal combustion engine vehicles by 2035 or 2040. And the total cost of ownership is already favourable for high-use vehicles.

### Total Cost of Ownership is already advantageous for long-distance electric buses (source: Bloomberg)



The task facing AFD Group is to define a roadmap to support the deployment of electric mobility in the Global South, where a significant share of the global increase in car fleets is expected. This approach will necessarily be differentiated according to the country: while emerging economies are priority targets, the poorest countries (mainly in Africa) will also benefit from targeted actions and pilot projects (project's financial soundness and potential for "going to scale" would be carefully studied) to gradually ease constraints, as car drivers are not or barely solvent and the public authorities in these countries rarely have the regulatory standards or financial tools to promote e-mobility; the issues related to public transport and access to mobility are pressing; and, finally, electric systems are still not fully reliable.

Some responses to questions under debate:

- o **Can we actually expect a decarbonisation of electricity mixes?** Even if electric vehicles are only environment-friendly when electricity generation is largely decarbonised (which is not yet the case in many countries), AFD Group intends to support electric mobility in all contexts, as local benefits (mainly in reducing air pollution) are proven and the shift to electric mobility in the design of urban space (low-emission zones, charging stations, priority parking places, etc.) must be made as soon as possible.
- o **How can the demand for rare metals and vehicle battery recycling be managed?** This point is a key issue and AFD Group will be cautious regarding this aspect in the countries where it operates, on a case-by-case basis and working closely with the solar photovoltaic sector.
- o **How can the impact on power grids be managed?** By promoting slow recharging to allow smarter management of the grid.

**In all the regions where AFD Group operates, support will be provided to develop projects promoting electric mobility. Its action could take the form of:**

- o **Public policy loans, including actions to promote electric mobility:** technical standards, tax incentives, vehicle conversion premium, regulatory obligations, industrial policies...
- o **For urban mass transit systems such as bus rapid transit (BRT),** a systematic promotion of “clean” engines (electric, hybrid, but also bio-gas).
- o **Road fleet renewal (or development) programmes with incentives for procurement of clean vehicles.** The scheme should hierarchise and prioritise the efforts for fleet renewals, starting with the lightest vehicles (2- and 3-wheelers) and heavy-use vehicles: public transport (bus, minibus, coach), taxis, shared vehicles (shared taxis, carsharing...), the administrations’ public fleet.
- o **Financing for public charging stations and equipments;** public (prioritising city areas, and possibly on motorways or roads with heavy traffic) or private (via Proparco).
- o **Financing for infrastructure reserved for electric vehicles or improvements to encourage their use** (segregated lanes, priority parking places, etc.).
- o **Integrated program,** including several of the above measures.



## B. At national scale, unleash the economic and social potential of territories

### 1. The issue: interconnect national capital cities, regional capital cities and rural areas

#### Ensure connectivity and land-use planning across the territory.

Linking up a territory by interconnecting cities stands as a major economic and social challenge. At the national scale, the sustainable growth of a country depends on enhancing and connecting up development centres. This development cannot happen without connecting infrastructure: roads (crucially, infrastructure adapted to serve all types of areas), rail (adapted to densely populated corridors and when the volume of goods to be transported warrant this and over sufficiently long segments), and waterways. Making regional capitals attractive is key, as it helps avoid the “megalopolisation” of national capitals and related complications. To this end, a well thought-out construction (i.e., compliant with the principles of sound environmental and social management) and effective maintenance of national road and rail infrastructure are prerequisites for balanced territorial development. However, strengthening the network of transport systems is not simply an economic and social challenge. It is also a question of political stability, mainly to avoid the isolation, pauperisation and radicalisation of some regions, particularly in the Sahel or central Africa. The equation is brutal, but in territories with no roads, government services rarely exist. **Maintaining a road network is thus a prerequisite for ensuring law and order and cohesion between regions.**

#### Connect rural regions to secondary cities to ensure access to basic services for all.

In the South, in addition to the megacities and regional capital cities, the rapid growth of “small cities” or towns is a key issue. In Africa, these have absorbed 60% of urban growth over the past 20 years. Today, 75% of Africans live in these rural towns, which are often under-equipped and poorly connected. For each of the small city and rural territory catchment areas, transport systems (combining road infrastructure, individual or collective vehicles, passenger and freight transport, and sometimes railway and air lines) are thus

**Respond to the investment gap for infrastructure in Africa, estimated at nearly US\$ 110 billion a year.**

The African Development Bank (AfDB) assesses the continent’s investment requirements at US\$170 billion a year, with a financing gap of US\$108 billion.

Transport accounts for 28% of the total with US\$47 billion a year, two-thirds of which are for capital expenditure and the rest for operations and maintenance. Compared to other regions, the African infrastructure deficit is substantial: paved road density per 100 km<sup>2</sup> is at 2 in Africa against 25 in Asia, while its 46 thousand kilometres of railway lines represent a fourth of the Asian network and half of the Latin American network.

For Africa, the challenge is also to create employment for the 12 million people that become part of its active population each year and are in danger of falling into poverty.

*Source: AfDB, African Economic Outlook 2018*

vital to ensure all-season access for everyone to similar services, to a maximum number of jobs and to farm produce markets. **Given the network lengths involved and the relatively moderate flows, the challenge is to optimally scale investments to meet demand, secure flows and organise appropriate maintenance over time**, while avoiding lasting financial burdens on future generations.

### Road safety, the first cause of death among 15- to 29-year-olds.

Each year, road accidents cause the death of 1.3 million people, and 90% of these happen in low- or middle-income countries (WHO, 2017), which concentrate only half of the world's vehicles. From 20 to 50 million people are injured each year. SDG 3.6 aims to halve the number of road traffic deaths and injuries. Aside from the major question of public health, the lack of road safety also weighs on the economy: it represents 2–2.5% of world GDP.

### In Africa, highly poor mobility conditions for goods and people

**Poor access.** In sub-Saharan Africa, only 34% of the rural population lives within 2 km of an all-season road.

**High costs.** Despite the cheap labour, the cost of road transport is 63% higher than the average for OECD countries (*source: PLARC-2015*).

**High level of insecurity.** With 32.2 deaths per 100,000 inhabitants, and despite its underdeveloped road network and low motorisation rate, Africa has one of the highest rates of road traffic deaths and accidents in the world (almost three times those in Europe).

### SDG 3.6 (road safety) – Halve the number of global road traffic deaths and injuries in the world by 2020... But how?

Road traffic accidents are due to a combination of factors: poor infrastructure condition or ill-adapted, unroadworthy vehicles, inappropriate legislation (e.g., speed limits), unsafe driver behaviour or untrained drivers, inadequate control measures and weak enforcement sanctions.

The fight for better road safety needs real political will and involves simultaneous actions coordinated at different levels: better adapted infrastructure, safer vehicles, more preventive, aware and responsible user behaviour, real training to obtain driving licences, more systematic and tougher controls and sanctions.

ZOOM

**Rail and waterway transport are economically appropriate in certain conditions.** Rail transport is an integrated technical system with very high capacity and energy-efficiency, which is also expensive and relatively inflexible. It is adversely affected by competition from road transport, which is highly flexible and most often benefits from state-financed infrastructure. Despite the advantages of rail in terms of safety and carbon footprinting, financing for new sections of line (greenfield infrastructure) is only appropriate in certain contexts: to serve densely populated corridors or freight transport (mainly, in some densely populated parts of Asia); to transport large volumes of heavy goods and containers over long distances; or to furnish high-speed solutions for intercity transport serving the already numerous wealthy middle classes (high-speed passenger transport).

For rail transport, the challenges are more about rehabilitating existing lines proven profitable, improving their operational effectiveness— including through energy efficiency (electrification, signalling and communications). Waterway transport follows the same logic: it is a low-emission transport mode but impossible to mainstream. It may be relevant when geographic and hydrological conditions are favourable and for certain types of freight, notably to supply large cities. Moreover, it may pose considerable problems with respect to maintenance of navigable waterways.

**Road networks as such are not incompatible with resilient, low-carbon development trajectories – what needs to change are vehicle fleets and their usage.** Roads are the main and often the only feasible solution for ensuring territory-wide service coverage. It is the “last mile” mode of transport providing door-to-door connection. This makes it a key vector for equity and territorial cohesion. Without any tangible alternative, an intercity road network is thus vital as it is the only means of meeting the essential mobility needs of people and goods. Most GHG emissions from road transport are produced, not by infrastructure works (which could be reduced with appropriate design and maintenance), but by the traffic it carries throughout its life cycle. There is ample room to reduce these emissions and align with low-carbon policies. This could include both improving traffic conditions (road user behaviour, reasons for travel and vehicle loading, the state of roads) and upgrading vehicle fleets (engine type, vehicle energy efficiency, fuel quality). The challenge is thus not only to incentivise governments to adequately maintain their structural road network, but also to change behaviours and vehicle fleets through regulatory or incentive measures (taxation and premium schemes, standards setting an emission ceiling) to make them less polluting.

### Rehabilitation of the North Road in Côte d’Ivoire: favourable economic and carbon-footprinting results



Through the C2D Fund and a sovereign loan, AFD is financing the rehabilitation of the North Road in Côte d’Ivoire, over a 220 km-stretch between Bouaké and Ferkésegoudou. This is the main trunk road linking the country’s northern and southern regions. It also gives neighbouring Burkina Faso and Mali access to Abidjan Port, thus ensuring these countries have a crucial maritime outlet.



A specific analysis of the project’s carbon footprint has shown that positive results are to be expected several years after the rehabilitated structure comes into service. The analysis shows a drastic decrease in fuel overconsumption by heavy-goods vehicles due to very poor traffic conditions. Over 20 years, the project is forecast to save the equivalent of 530,000 t CO<sub>2</sub>.

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ZOOM

**High stakes for adaptation and resilience.** Often the only means of land transport, roads are a powerful vector for adaptation and resilience to climate change as they provide access for emergency services, mainly during extreme weather events (flooding, drought, landslides, etc.), and also ensure links with neighbouring areas (“remaining connected”). This is only possible when the roads themselves are designed and constructed to withstand such extreme events and, above all, adequate maintenance, coupled with well-organized early warning systems – conditions that also apply to railway lines.

## 2. AFD’s operational strategy for national connectivity

Today, AFD Group finances different types of road and rail infrastructure ensuring a territory’s connectivity. Among the AFD-financed projects are rural road programmes, rehabilitation of traditional intercity roads or motorway links, and rehabilitation or creation of railway lines. This new operational framework reasserts the salience of such infrastructure and its related services in guaranteeing sustainable and resilient growth and territorial cohesion. It still emphasises the importance of maintenance, transport safety, and good governance by public transport operators (rail companies, infrastructure managers...). It proposes a new line of action to tackle the issue of climate change, as it now approaches the energy-efficiency of transport systems as a whole, notably by supporting the transition of vehicle fleets (public and private) to low-carbon solutions.

AFD’s objectives and proposed approach for national connectivity are presented below, along with their five lines of action.

### Key assumption: the roll-out of new financial tools

To implement projects consistent with the lines of action proposed below, AFD Group needs to diversify its financial tools, beyond classical project loans:

- o Mobilise Project Preparation Funds (FAPS) for optimal (technical, legal and financial) structuring of large-scale infrastructure projects;
- o Mobilise project grants to finance rural roads (notably to open up fragile territories) or programmes to professionalise small operators;
- o Provide support grants to involve AFD Group on road safety and the reform of major public operators (mainly rail);
- o Develop programme loans to finance multiple operations involving road safety, energy efficiency or rural roads;
- o Develop public policy loans (PPLs), to support government policies geared to vehicle standards, regulation, incentives for fleet renewal;
- o Mobilise financial tools for the replacement of fleets: lines of credit, guarantees, revolving funds, etc.

## National connectivity: develop the economic and social potential of the territories



## LINE OF ACTION 1 — CONSOLIDATE NATIONAL CONNECTIVITY BY FOCUSING ON THE REHABILITATION AND STRENGTHENING OF EXISTING INFRASTRUCTURE

AFD will continue to finance key transport infrastructure when this is part of rational plans to promote sustainable and balanced territorial development. In its concern to rationalise investments, AFD Group will prioritise the upgrade of existing infrastructure and ensure that works are appropriately designed and sized. In particular, AFD will support projects promoting low-carbon development, either through more efficient and cleaner implementation, operating and maintenance methods, or through a modal shift towards mass transit modes (notably rail).

This encompasses:

- o **Rehabilitation and strengthening of existing intercity road links:** when possible, AFD will prioritise projects consistent with regional-scale transport corridors connected to logistics or port hubs; with focus on adequate management of routes crossing cities; on improving environmental performance; and on rehabilitating and/or securing engineering works in poor condition.
- o **Rehabilitation and development of existing rail lines,** mainly for freight (including renewal of rolling stock and depots), together with an analysis to identify the industrial sectors linked to the materials transported avoid to indirectly support sectors judged to be unsustainable. AFD Group will prioritise pragmatic solutions effectively meeting demand, while also seeking financial equilibrium (e.g., dealing with hard spots rather than complete rehabilitation). AFD Group can also finance the electrification of rail lines or the modernisation of signalling systems, so as to improve service levels and increase the line capacity and energy efficiency.
- o **Investment to enhance inland waterway navigation** when the socio-economic benefits of such investment, which is often costly, are soundly demonstrated.

### GOING FURTHER

More effectively reconcile the challenges of smooth transit traffic and driving through urban areas in secondary cities

### Freight transport and sustainable and resilient growth: contextualised “sector” analyses

To assess the contribution of transport infrastructure to sustainable and resilient growth, AFD Group is extending its scope to sectors linked to the materials transported. For example, AFD Group will exclude financing for rail lines dedicated to transporting coal and hydrocarbons, or mining products deemed unsustainable. This contextualised analysis is on case-by-case basis, factoring in operating conditions (such as the consumption of natural resources), carbon footprint, continued economic dependency as opposed to existing alternatives for growth, etc.

The AFD Group will nonetheless remain open to financing projects for new infrastructure provided the project contribute to sustainable growth and a low-carbon development pathway. This involves, for example:

- o **Road infrastructure with high level of service** (highways, urban bypasses), preferably via public-private partnerships in coordination with Proparco, provided the economic rationale of the infrastructure is soundly demonstrated, environmental performance is enhanced (decongestion effects), it is in line with the AFD Group commitments to the low-carbon transition (assessment of the traffic generated, no lock-in effect for the decarbonisation pathway) and, above all, it does not compete with rail transport in the same corridor.
- o **Construction of new high-speed or semi-high-speed rail lines for passenger travel**, in countries where time has high value, when these lines have the potential to effectively concentrate transport flows and significantly improve operating and environmental performance.

#### In Morocco, structuring rail projects to connect the North part of the country



AFD Group financed the connection between Tangiers city and the new Tanger-Med port (project completed in 2010), and the Tangiers-Kenitra high-speed rail link (in service at the end of 2018). These two projects aimed to develop the North part of the country, which had suffered for decades from the absence of investment.

ZOOM

## LINE OF ACTION 2 — IMPROVE ACCESS FOR RURAL AREAS TO FACILITATE THEIR TERRITORIAL INTEGRATION

Operations targeting secondary road networks encompass varied approaches which, nonetheless, have some common features. These roads have little traffic, are mostly unpaved, and generally fall into the second or third category of network classification. When it comes to supporting rural road networks, three approaches are possible:

- o **National upgrading programmes**, which apply a standardised approach and often lead to over-dimensioned investments when compared to real needs and the transport means actually used.
- o **A “supply-chain” approach**, geared to removing bottlenecks (including road infrastructure) in order to develop agricultural supply chains, from the point of production to the point of processing or export.
- o **A territorial and population-oriented approach**, aimed at meeting the basic mobility needs of local communities: access to water, to schools, to fields, etc.

These three approaches relate to the difficulty to rationalise investments, given not only the extensive road lengths involved, but also the challenges of sustainability and effectively organised maintenance – challenges heightened in a context of climate disruption. As a result, the impacts of investments, particularly under national programmes, have often been questioned.

**AFD will continue to finance rural transport in order to reinforce social link, integrate poor rural communities in the economy, and contribute to food security in vulnerable areas.** The following good practices will be systematically targeted:

- o **Ensure a diagnosis of mobility needs** (notably with respect to the means of transport used) to rationalise investment; prioritise treatment of critical points (mainly, watercourse crossings flood-prone areas in the rainy season) rather than reinforcing complete lines, which would incur unsustainable costs; prioritise **territorial** and participatory **approaches** placing people's needs at the centre of investment planning.
- o **Ensure territorial integration** by also considering related infrastructure (bus terminals, connections to villages, quality of road shoulders) and by developing a more proactive approach to **flexible and multi-purpose transport services** (intermediate means of transport for passengers/freight).
- o **Promote, as much as possible, strong participation of beneficiaries and affected communities** in planning, construction and maintenance: upstream participatory processes, labour-intensive works promoting involvement and use of local resources and labour to maximise the impact on employment; the creation of local committees responsible for maintenance.

## GOING FURTHER

Integrate impact evaluation right from the design stage of rural road programmes (notably by ensuring that baseline surveys on existing conditions are carried out)

### What is moving on rural roads? The ingenuity of “intermediate means of transport”

Given the great poverty prevailing in the rural world in some countries, cars are still largely unaffordable. As a result, makeshift vehicles have spontaneously emerged. Although extremely simple, they allow real improvements to the productivity of rural transport, which had relied on the muscle power of humans and animals. These vehicles, now referred to as “intermediate means of transport” (IMTs), are highly diverse and often very specific from one country to another. Motorised or not, built locally or by distant industrial manufacturers and diverted from their original purpose, they share two characteristics key to their success: their affordability and a great robustness making maintenance easy. They are crucial in integrating the rural world into the national economy. Yet, in Africa, these means of transport are relatively underdeveloped, which reduces the impact of rural road programmes and the level of mobility in these areas.



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ZOOM

## LINE OF ACTION 3 — PROMOTE IMPROVEMENTS OF PUBLIC OPERATORS' GOVERNANCE

AFD will continue to support capacity building for regulators and state-owned enterprises in order to enhance the sector's governance and bring about more adapted management modes, mainly with respect to operating services and maintaining infrastructure. The good practices to be promoted include:

- o **Investment planning and the sustainable management of physical assets:** AFD Group will advocate for optimal financing of investment programmes and for project design taking into account the life-cycle of the infrastructure. For example, when designing infrastructure, it may be relevant to anticipate low maintenance levels and/or to accept intermittently inferior levels of service.
- o **Operational effectiveness of private and public stakeholders** (mainly rail) in order to work on optimising or even reducing operating costs and the costs of maintaining and renewing infrastructure and vehicles.
- o **Sustainable contractual and financial schemes for infrastructure maintenance,** particularly road infrastructure, with:
  - > Identified long-term financing mechanisms (road funds) to maintain infrastructure and engineering structures, as it is critical to the effective functioning of networks,
  - > Control of vehicle use (enforcement efforts to fight truck overloading need to be organised at sub-regional level),
  - > An effective linkage between preventive and corrective maintenance, based on strict monitoring of the network and initiatives,
  - > Possible delegation of some tasks to the private sector through contracts covering initial construction (or rehabilitation) and/or maintenance over several years.



### GOING FURTHER

AFD will help to develop or strengthen the contractual and financial tools designed to ensure maintenance over the long term

#### Road funds, a vector for infrastructure sustainability

To tackle inadequate maintenance of road networks worldwide, often due to lack of funding, road maintenance funds were set up in the 1990s to capture parafiscal taxes (or road user charges) mainly levied on oil products to finance road maintenance. These instruments have not resolved all road maintenance issues (management problems, inadequate resources and implementation difficulties), but they have globally contributed to greater sustainability for road-related investments.

## LINE OF ACTION 4 — TACKLE ROAD SAFETY ISSUES IN A MORE AMBITIOUS MANNER

Improving road safety requires actual political will to implement a series of coordinated actions over time, coupled with unpopular, but necessary, coercive measures. AFD Group will work to ensure that each road project receiving its support includes a “road safety” component that could take the form of:

- o **Road infrastructure design paying closer attention to road safety**, not only by ensuring the appropriate combination of speed–traffic–road geometry–signalling, but also giving special treatment to points interfacing with other users: firstly, pedestrian walkways in urban areas, particularly around stations and public transport stops, as well as railway crossings. These enhanced design standards must go together with actions targeting the sector’s governance and organisation: good level of maintenance, creation of road safety observatories, identifying and tackling accident black spots, audits and specific investment programmes to improve safety on certain roads.
- o **An incentive framework to improve vehicle roadworthiness**: one lever is to improve vehicle roadworthiness inspections by financing and assisting technical inspection agencies, certification bodies and licensing authorities, along with axle-weighing stations. Moreover, AFD Group can provide financial incentives for scrapping old vehicles (personal and collective vehicles) and vehicle fleet renewal. It can also assist local authorities in supplementing these incentive programmes with control measures and measures taking dangerous vehicles off the road.
- o **Measures to change user behaviour**. This means reinforcing the criteria for granting driving licences, bringing in various rules (speed, seat-belts, helmets) with adequate means of control and enforcement (possible automation of various controls and fines). AFD Group will support public actions and policies along these lines. It can also directly support the entities in charge of communication and prevention by financing awareness campaigns (compliance with the highway code, speed, use of helmets, etc.) and, more broadly, by supporting educational programmes aimed at changing the users’ civic behaviour.
- o **Professionalisation of the sector**, based on setting up partnerships with peer institutions, specialised institutes, to conduct training sessions for incumbent operators and their drivers (intercity buses, truck drivers, etc.), as well as more informal and small paratransit actors (minibus, informal taxi, etc.).



### GOING FURTHER

AFD Group will now integrate a “road safety” component into each of its operations in the road sector

## LINE OF ACTION 5 — PIONEER PROJECTS IMPROVING ENERGY EFFICIENCY OF OPERATORS AND USERS

The energy efficiency of operators depends primarily on improving the tools of production – infrastructures and vehicles – of major operators. This concerns rail operators as they are potentially the biggest electricity consumers when the network is electrified. Promoting energy efficiency also hangs on more indirect approaches creating greater incentive and awareness leading to virtuous or innovative behaviour. In particular, AFD Group will support:

- o **Infrastructure improvement projects designed to enhance the energy efficiency of the major transport operators.** The challenge is to encourage these actors to improve their facilities by prioritising more energy-efficient solutions. This could involve, for example, electrifying high-density rail lines, bringing in incentives to use “green” vehicles on road networks (charging stations, etc.), promoting energy efficiency in operating premises, taking the opportunity to make them more sustainable (reprocessing of liquids and oil, rainwater harvesting, etc.), optimising the location of maintenance sites or depots to reduce empty runs... Another lever is to study the possibilities of using renewable energy to cover the energy needs of transport networks.
- o **Renewal of rolling stock fleets, both for road and rail,** by prioritising lower-emission technologies (Euro 5, electric, gas, hydrogen, etc.), at the same time providing not only greater comfort, speed and reliability for passengers, but also higher productivity, sustainability, resistance and sustainability for goods transport. For this, several financing modalities can be proposed, notably in partnership with Proparco or through financial intermediaries.
- o **Projects for disruptive energy innovation, particularly in rural areas,** for instance, by financing the introduction of small low-emission vehicles (two-wheelers, scooters) as intermediate means of transport in the countryside, and by developing networks of on-grid and off-grid charging stations (e.g., solar).
- o **Creating greater user awareness** on “eco-driving” and better vehicle occupancy rates. This can include incentive pricing measures (fuel prices, tolls), creating priority traffic lanes on large road infrastructures or awareness-raising campaigns.
- o **Enable and promote measures by contractors to improve energy efficiency on construction sites.** This can equally well cover environmental certification processes or innovative low-carbon approaches, such as processes for recycling road materials which help reduce materials transport and thus, indirectly save large amounts of energy.

### GOING FURTHER

Support a national policy designed to manage road vehicle emissions standards, and propose financial tools for fleet renewals (credit lines, guarantees)

## C. At the international scale, integrate economies into global trade

### 1. The issue: upgrade infrastructures and equipments to support a sustainable growth of trade

**Growing trade volumes and containerisation of maritime transport.** Carrying over 10 billion tonnes of goods, maritime transport now accounts for nearly 90% of world trade (in volume), and is the backbone of a country's economic growth. Mainly from the private sector, the actors are now looking at reducing costs, which is leading to two phenomena: ever-increasing vessel sizes and containerisation of goods (representing 15% of the total). This has a strong impact on the logistics networks organised around major hubs and distribution centres (feederling). In this competitive system, port infrastructure needs to be adapted and modernised (larger depth and width of ships and channels, container-handling equipment...). Moreover, the sector is highly volatile as it depends on global economic growth and private sector's strategies. It also entails considerable risk of overcapacity and over-investment. For some countries, the sector is also the source of huge amounts of foreign currency.

Beyond the economic dimension, geopolitical considerations are inevitable. For instance, China is now at the centre of shipping routes organised around the main maritime straits (Suez Canal, Panama Canal, the Strait of Malacca) and is supporting multiple projects for the construction of port facilities as part of its ambitious continental initiative to create an economic corridor crossing Asia into Africa and Europe (Belt and Road Initiative).

Finally, the environmental and "climate" challenges for maritime transport are huge: the shipping world is the lowest GHG-emitting freight transport mode per transported tonne, but there is still room for improvement; it also remains a major source of air pollution in ports.

#### **In Africa, port and airport capacities are largely insufficient, and transport costs are high**

Today, Africa accounts for only 3% of world trade and 5% of world maritime trade. Yet, it has strong growth potential given the high economic growth rates and expected demographic explosion. Port traffic is following global trends: more containerisation and the development of the Africa-Asia axis. Although projects are accelerating, often in the form of public-private partnerships (concessions for new port terminals, extension of the Nairobi and Addis-Ababa airports, the new Dakar airport), a significant lag in infrastructure persists.

Moreover, Africa is disadvantaged by high trade costs and lengthy goods processing times. The connectivity with port hinterlands is still poor. For example, shipping a container from South-East Asia to Europe costs around 900 dollars, while the cost from Africa is 2,000 dollars. A study shows that the share of transport costs in end consumer prices averages 27.5% in Africa against 14% in Asia. Given the difficulty of playing on competition in these markets and the lack of attractiveness due to the sparsity of economic activities, competition decreases and producers and consumers are unable to benefit from attractive transport costs.

**The explosion of air passenger transport boosted by economic growth in emerging countries.** Air transport has also followed a sustained growth trend, with nearly three billion passengers transported today for either “family and friends”, business or tourism purposes, with substantive positive impact on employment (60 million direct jobs worldwide). Air freight, generally a “by-product “ of passenger transport, represents low volumes but generates high added-value (35% of global value). All told, estimates place air transport as generating some 3.5% of world GDP. However, the market remains highly volatile, particularly the tourist sector, which is always very sensitive to climate, health and security crises. The key question is that of the sustainability of these increasing flows, particularly with respect to climate issues.

**The performance of global logistics chains along international corridors.** Although the effective distribution of roles between the public and private sectors improves the management of port and airport infrastructure, the overall service performance also depends on the efficiency of customs clearance and cargo transfers to road or rail modes for “distribution”.

**The challenges of the decarbonisation of the international shipping and air sectors.** Air and maritime transport represent 2% and 3% of global GHG emissions respectively. Initially excluded from the international agreements reached at the COPs due to their transnational character, both sectors lagged behind in making climate commitments. However, since 2015, stakeholders have engaged in the energy transition. The proposed emission-reduction levers are to cut the fuel consumption of aircraft and ships and use alternative fuels; to optimise the design and management of ports and airports in view of carbon-neutrality; and, for the air sector, to limit emissions during take-off and landing. If the transport sector is to comply with the 1.5 °C trajectory, the objective is to halve the emissions from these two sectors compared to the 2015 baseline. In addition to the energy-efficiency efforts of both sectors comes the question of whether the increase in traffic is sustainable in the long run. This calls into question industrial models based on the extreme fragmentation of value chains, and development models based on mass tourism. This means that, for each infrastructure project, the realism and acceptability of the forecast growth in demand should be examined.

### The climate commitments made by international stakeholders of maritime and air transport



**Air transport.** The International Civil Aviation Organization (ICAO) is aiming at carbon-neutral growth of the sector as from 2020 on. This objective is achievable provided proactive measures are taken to control the sector’s growth, mainstream biofuels and implement probably high residual compensation. The International Air Transport Association (IATA), supported by airlines, has adopted the goal of returning to the 2005 emissions level by 2050, which is achievable provided major technological innovations kick in or mobility is reduced. The actors are involved in an emission compensation mechanism (CORSIA). AFD Group will finance a partnership with the French Directorate General for civil aviation (DGAC) to support the least advanced countries.



**Maritime transport.** In 2018, members of the International Maritime Organization (IMO) are committed to reducing GHG emissions per tonne/kilometre by at least 40% by 2030, while pursuing the efforts to reach -70% by 2050.

ZOOM

**Integration of port and airport infrastructure into their surrounding areas and hinterland.** Improved access and integration into international trade are prerequisites for economic development. This is particularly true for island territories and Africa as a whole, which suffers from a lack of infrastructure. Large trade hubs are the drivers of local economies: they are structuring and polarising entities for their city or the surrounding territory, major sources of local employment, industrial powerhouses (notably for export sectors) and crucial links in a complex logistics chain connected to a country's economic centres.

**Regulation and global governance to ensure traffic safety and operational efficiency.** The increase in traffic and the requirement for quality service are sources of growing concern for safety and security: traffic safety on the increasingly busy air and maritime routes and management of piracy- or terrorism-related risks. Port or airport hubs are de facto strategic infrastructures that need to be secured as a priority. Securing these flows requires effective global governance of maritime and air spaces (via prescribers such as IMO and ICAO) and effective national governance (regulator/operator/controller).

In addition to safety questions, the challenges for air sector governance are many: standardisation of procedures to create a “single sky”, choices on the capitalisation and concentration of national airlines, the independence and management of these companies, which has a strongly political side, concentration (ever-bigger planes and airports) with the structuring of major hubs underway...

## 2. AFD's operational strategy for international transport sector

AFD Group finances today all types of port and airport infrastructure, with a strong geographical focus on Africa – given the need for an infrastructure catch-up – as well as on overseas France and island states, in order to tackle the issue of opening up these territories.

The present operational framework reasserts the salience of air and maritime transport in territorial development by focusing on: i) the energy transition required in these sectors; ii) the challenges of security and safety; and iii) the need to develop port or airport hubs integrated into their environment, in order to make the most of leverage effects on the economy and local employment.

### Key assumption: the roll-out of new financial tools

To implement projects consistent with the lines of action proposed below, the Group needs to consolidate the available financial tools:

- o Mobilise Project Preparation Funds (FAPS) to optimise the (technical, legal and financial) structure of large-scale infrastructure projects,
- o Continue non-sovereign loan operations, even in financially fragile states (e.g., Ethiopia),
- o Develop the capacity to intervene with loans in overseas France (competitiveness, capacity to lead a “climate” dialogue,
- o Develop programme loans, or “corporate” financing for large operators, for multiple operations in the area of safety/security, energy efficiency.

## International integration: integrate economies into world trade



## LINE OF ACTION 1 — OPEN UP TERRITORIES TO ENSURE THEIR INTEGRATION INTO INTERNATIONAL TRADE

AFD will support the contribution of international air and maritime transport to economic and social development, to the opening-up of territories, to territorial continuity (mainly for islands), and to integration into regional and international trade. To this end, AFD Group will act to develop or upgrade port or airport hubs in line with the Group's different geographic mandates:

- o **Priority intervention in sub-Saharan Africa** (the necessary infrastructure catch-up), in the least-developed countries, overseas France, and remote islands and regions, to support countries' economic and social development and the opening-up of territories.
- o **The possibility for AFD to prospect and respond to requests in other region** (Asia, Latin America, Mediterranean) to tackle environmental, energy-efficiency and safety issues.

### GOING FURTHER

AFD Group intends to improve the evaluation of impacts on local employment for each type of port or airport investment

#### ZOOM

#### Finding synergies with AFD Group to finance the private sector

Port or airport infrastructure financing crucially requires public and private actors. The synergies among AFD Group entities need to be optimised, around Proparco, the AFD Group private-sector financing subsidiary. This could be in the form of upstream strategic advice for contracting authorities in order to facilitate the completion of financing plans, as these are often colossal and involve complex legal-financial arrangements. Several complementary financial tools can be mobilised (including public.)

#### The extension of Kingston port (Jamaica)

The extension of Kingston port was carried out under a 30-year concession awarded to the shipping company CMA-CGM. The US\$452 million investment programme will step up the capacity of the container terminal to 3.2M TEU and increase the draught to -14 m. Financed partly by Proparco and with technical assistance from AFD Group, this project will enable CMA-CGM to build its strategic trans-shipment hub at the intersection of major shipping routes (serving the North and Central American markets) used by the largest ships of our



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## LINE OF ACTION 2 — LEVERAGE MAJOR INTERNATIONAL TRADE HUBS FOR A BALANCED TERRITORIAL DEVELOPMENT

The leverage effects of transport infrastructure are sometimes difficult to assess. These are usually divided into:

- o **Direct employment and turnover** on the port or airport hub,
- o **Upstream/downstream structuring of the logistics chain** in the hinterland (road and rail transport and dry ports distributed over the territory),
- o **Industrial zones created** around this logistics chain.

AFD will seek to foster these leverage effects by:

- o **Supporting the authorities to better integrate port and airport hubs into their surrounding territory.** Given their strategic and economic importance, port and airport facilities have traditionally been developed in the heart of cities. Today, urban growth has caught up, limiting the possibilities to extend the facilities and they now produce significant levels of pollution affecting adjoining neighbourhoods. AFD Group intends to better integrate these facilities into the city and mitigate the different forms of pollution that impact residents' quality of life.
- o **Improving the connectivity between port and airport hubs and their hinterland.** By financing ad-hoc rail, road or waterway transport infrastructure, AFD Group will support the development of hinterland networks and the connectivity between hubs and associated logistics infrastructure (wholesale markets, dry ports, etc.) to facilitate passenger travel and the import/export of goods, and improve transport services for these zones, which create a large number of jobs.
- o **Supporting the development of industrial and logistics ecosystems creating local jobs on international trade hubs.** Although this mostly involves private investment, the public authorities' role is to create an enabling environment to develop the industrial and logistics activities that create permanent employment (identify sustainable industrial sectors and hub-related activities, prepare master plans or upstream studies, develop land-use strategies, finance shared infrastructure).

### GOING FURTHER

AFD Group will develop a pilot project combining a territory's key nodal infrastructure and associated projects, to demonstrate a positive leverage effect.

## LINE OF ACTION 3 — SUPPORT LOCAL AUTHORITIES IN IMPROVING THE EFFECTIVENESS OF REGIONAL LOGISTICS CORRIDORS

Efficient performance of the major international corridors depends not only on coordinating and articulating logistics chains linking up maritime or air transport and road transport, but also on managing transfer, trans-shipment, as well as logistics and customs operations. The challenge does not simply involve physical handling, but also organisational and standard-related issues (effectiveness, prices, traceability, timeframes, safety). As a result, if infrastructure is financed with little attention to the overall effectiveness of the chain, the overall performance of international trade cannot be improved. The points to be improved include:

- **Operational effectiveness** of infrastructure, with responsible management of competition,
- **Intermodality and optimal multimodal management** of freight between different modes, sites or infrastructure,
- **Establishment of free economic zones** facilitating border-crossings (traceability and electronic procedures, harmonising standards such as those for axle loads or driving rules, single windows for ports, etc.),
- **Coding and traceability of vehicles and goods** (vessels, aircraft, wagons, vehicles, containers) using digital technologies.

When it comes to regional cooperation, AFD Group will seek rather to support programmes financed by multilateral banks and favour national approaches by prioritising:

- **Support to public operators** to achieve technical and financial effectiveness (financial models, management tools, etc.),
- **Support for reforms** enabling optimal allocation of functions between public and private actors (concession agreements for operating terminals, etc.),
- **Support to customs authorities** to improve procedures.

### GOING FURTHER

AFD will systematically support the simplification of customs procedures to facilitate transit (single window, digitalisation)

#### ZOOM

#### Partnerships with French public port and airport operators



AFD Group supports the implementation of a cooperation programme between the Port Autonome de Dakar and the Grand Port Maritime de Marseille. Firstly, the programme aims to tackle the short-term issues faced by the Port of Dakar and which compromise its attractiveness and competitiveness. Secondly, AFD Group will draw on the expertise of the Marseille port to assist the Port of Dakar in defining its medium -to-long-term development strategy.

In the same spirit, the Grand Port Maritime du Havre is supporting port authorities in Cameroon and Indonesia for investment planning and environmental performance.

The Aéroports de Lyon are providing Douala airport in Cameroon with assistance for the design and implementation of the new air terminal.

## LINE OF ACTION 4 — ACCELERATE THE ECOLOGICAL AND ENERGY TRANSITION IN THE MARITIME AND AIRPORT SECTORS

In line with the AFD Group intervention framework note for the air sector, AFD Group will selectively promote air-sector projects compatible with a low-carbon and resilient pathway. AFD Group will remain open to financing some potentially GHG-emitting airport developments provided these comply with its Climate and Development Strategy (compliant with its selectivity matrix and compatible with the 100% Paris Agreement objective). During the project appraisal phase, AFD Group will assess the opportunity and scale of investment in light of the need to catch up for regions with the weakest air connectivity, and of the sustainable development paths of islands and overseas territories that heavily depend on air service.

AFD Group will support the stakeholders of the maritime and air sectors in their steps towards ecological and energy transition. These stakeholders (regulatory bodies, airlines, manufacturers, industrialists, operators, handlers, ship-owners, etc.) have become aware of the environmental impact of their activity and have already set objectives to control energy consumption, reduce local pollution and GHG emissions and protect biodiversity (invasive species).

### GOING FURTHER

AFD Group will assist at least one operator in its environmental/climate certification process

### A dialogue to be built with partners on environmental and climate impacts

CHALLENGES		“SOFT” INTERVENTIONS (PROCEDURES, MASTER PLANS)	INTERVENTIONS ON INFRASTRUCTURE AND FACILITIES
Control polluting discharges and waste	Air quality	<ul style="list-style-type: none"> <li>- Improve traffic flows</li> <li>- Fluidify port passage</li> </ul>	<ul style="list-style-type: none"> <li>- Power supply for ships / aircraft; gas-powered ships; biofuel-powered aircraft</li> </ul>
	Water quality	<ul style="list-style-type: none"> <li>- Improved quality of dock water</li> <li>- Plans to prevent oil spills and invasive species</li> </ul>	<ul style="list-style-type: none"> <li>- Facilities for wastewater recovery</li> <li>- Ballast-water management</li> </ul>
	Waste	<ul style="list-style-type: none"> <li>- Plans to manage waste / hazardous materials</li> </ul>	<ul style="list-style-type: none"> <li>- Facilities for solid/liquid waste recovery</li> </ul>
Climate – Reduce GHG emissions		<ul style="list-style-type: none"> <li>- Energy-efficiency audits, “low-carbon” master plans</li> <li>- Carbon certification</li> </ul>	<ul style="list-style-type: none"> <li>- Electric / automatic handling equipment</li> <li>- Renovation of buildings</li> <li>- Solar panel installations and electric vehicles</li> </ul>
Climate – Adapt to climate change		<ul style="list-style-type: none"> <li>- Studies on infrastructure resilience</li> </ul>	<ul style="list-style-type: none"> <li>- Works that protect infrastructures (dikes)</li> </ul>

## LINE OF ACTION 5 — IMPROVE THE SAFETY AND SECURITY OF INTERNATIONAL TRANSPORT

Air and maritime transport modes are among the safest in the world. The risk of accident is very low but the potentially catastrophic consequences often have a deep impact on people's minds. The future high growth of air and maritime traffic will create the need for substantial investment in monitoring and flow management tools, particularly in dense regions liable to bottlenecks. Managing security risks, including terrorist threats. Is another major challenge.

AFD will support operators, air traffic managers, airport and port regulators in the areas of:

- o **Infrastructure:** upgrade infrastructure to international safety standards to secure air and maritime traffic,
- o **Navigation, control and safety systems:** strengthen supervisory authorities; modernise navigation equipment and control and safety tools.
- o **Governance:** facilitate information exchange between countries and hubs in order to further reduce the risk of accidents, damage or loss of goods, achieve traffic safety; and harmonise safety standards, etc.

### GOING FURTHER

AFD Group will rely on regional bodies for contributions to safety/security training programmes

#### Safety is ASECNA's core mission



The Agency for Aerial Navigation Safety in Africa and Madagascar (ASECNA) is an international organisation in charge of providing “services ensuring the regularity and safety of air flights for general air traffic” in an exclusive and unified way in the territories of its 17 member States. ASECNA has over 50 years of diverse and recognised experience in providing air navigation services. It is an example of successful regional cooperation and a guarantee of service quality for safety and air navigation in contexts where the national civil aviation authorities responsible for controlling and supervising the sector sometimes have shortcomings and little independence. On a topic as sensitive as air safety, the member States have a major incentive to work together rather than disperse their resources (scale economies).

As such, ASECNA is a crucial partner for AFD Group when it comes to improving air safety in Africa, which is still a region too fragile on this count. AFD Group has thus been supporting this institution for 20 years to finance investment in safety upgrades.

ZOOM

# GLOSSARY

AFD	French Development Agency
AfDB	African Development Bank
ADEME	French Agency for Energy Efficiency
ASECNA	Agency for Air Navigation Safety in Africa
BRT	<i>Bus Rapid Transit</i>
CEREMA	The French Public Agency for Expertise in Environment, Risks, Mobility and Planning
CETUD	<i>Conseil Exécutif des Transports Urbains de Dakar</i> , transport authority in Dakar
C2D	<i>Contrat de désendettement et de développement</i> , funds that were made available for development at the time of French debt cancellation
C40	Cities Climate Leadership Group, created in 2005 to join forces in the fight against climate change
CODATU	International Association for sustainable urban mobility in South cities
CORSIA	Carbon Offsetting and reduction scheme for international aviation, a mechanism for compensation of GHG emissions from international aviation
(E)ASI	<i>Enable-Avoid-Shift-Improve</i> , the analytical framework for decarbonisation of Transport sector
FAPS	<i>Facilité d'amorçage, de préparation et de suivi des projets</i> , AFD tool for project preparation
FEXTE	<i>Fonds d'expertise technique et d'échanges d'expériences</i> , a joint financial tool AFD-French Minister of Economy for supporting peer-to-peer exchanges
GHG	Greenhouse gas
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation, a UN agency created in 1944
ICLEI	<i>International Council for Local Environmental Initiatives</i> , an association founded in 1990 under the auspices of the United Nations for Environment Programme
IFSTTAR	<i>Institut français des sciences et technologies des transports, de l'aménagement et des réseaux</i> , a French public research institute for Transport
IMO	International Maritime Organisation
ITDP	Institute for Transportation and Development Policy
INDC/NDC	Intended Nationally Determined Contribution

KfW	<i>Kreditanstalt für Wiederaufbau</i> , German Development Bank
MAAS	<i>Mobility as a Service</i>
MOOC	<i>Massive Open Online Courses</i>
MYC	<i>Mobilise Your City</i> , international partnership launched in 2015 for a low-carbon urban mobility planning
NGO	Non Governmental Organisation
OECD	Organisation for Economic Cooperation and Development
PIARC	World Road Association
PPP	Public Private Partnership
PPL	Public Policy Loans
PROPARCO	AFD Group subsidiary for private sector
RATP	<i>Régie autonome des transports parisiens</i> , public operator in Paris
SDG	Sustainable Development Goals, established in 2015 by the United Nations
SETRAG	Société d'Exploitation du Transgabonais, operating rail transport in Gabony
SOTRAMAC	<i>Sociedad Operadora de Transporte Masivo de Cartagena</i>
SLOCAT	<i>Sustainable Low Carbon Transport</i> , International partnership for sustainable mobility
SUM4All	Sustainable Mobility for all
SUMP	Sustainable Urban Mobility Plan
TOD	Transit Oriented Development, an approach aiming at densification along transport corridors
TUMI	Transformative Urban Mobility Initiative
UFC	<i>Union de Ferrocarriles de Cuba</i>
UN-Habitat	United Nations Human Settlements Programme
UNOPS	United Nations Office for Project Services
WHO	World Health Organisation
WRI	World Resources Institute
W2W	Well to wheels, scope for a complete analysis of vehicle emissions



The mobility of people and goods is one of the key conditions for achieving the sustainable development goals (SDGs): it is indispensable for enabling people to access employment and basic services (health, education), for the effective and sustainable functioning of a productive economy, and so that cities remain efficient, breathable and liveable.

The Agence Française de Développement will support countries in the South in building sustainable mobility systems, and will provide an average €1 to €1.5 billion a year for this purpose.

This new “Mobility and Transport” sectoral intervention framework reflects the new AFD Group 2018–2022 Strategy. It proposes sector-specific, operational lines of action to respond to the major external challenges of the fight against climate change, the new energy paradigm and the digital revolution.



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